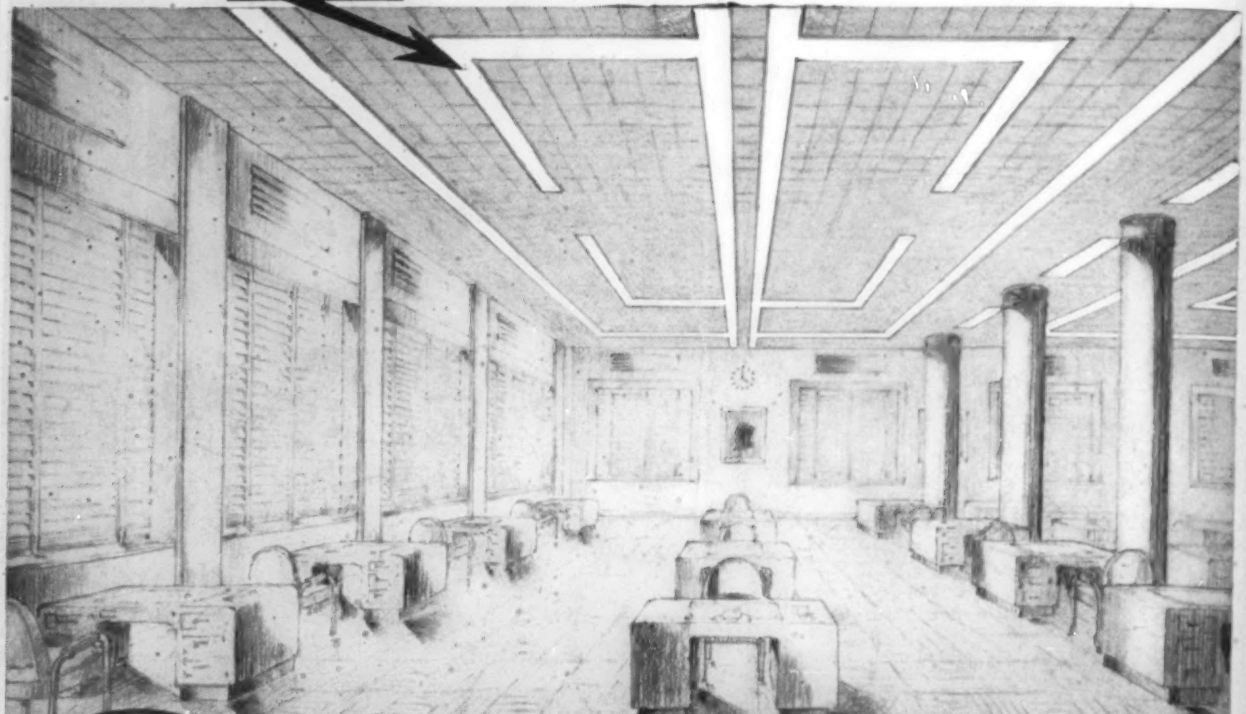
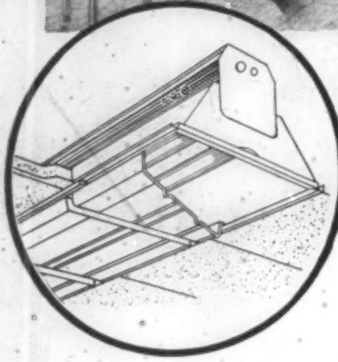
Architectural
Library

ARCHITECTURAL RECORD

HIGHWAY HOTELS • JULY 1945

Follow *These* Lines of Least Resistance





Miller Fluorescent Troffer Lighting Systems

for offices, stores, factories, schools and public buildings

AID IN PLANNING
SIMPLIFY CONSTRUCTION
FACILITATE MAINTENANCE

Other Pluses of MILLER Fluorescent Troffer Lighting Systems:

Supports from structural ceiling reduced 50 to 75%.

•

Conduit and conduit fitting costs reduced up to 80%.

•

Wiring costs reduced up to 50%.

•

Permanent operation and maintenance economies.

They aid in planning because they suggest practicable new themes for interiors.

In geometric patterns or lightstrips "by the mile" . . . in a versatile variety of glass and plastic lenses, plates, and metal or plastic grilles . . . they encourage the modern trend to plan the *entire building* around the lighting.

They simplify construction because of mature, forward-looking engineering that solves past problems—without adding new ones.

For instance: The Miller patented bracket ends laborious fitting of recessed lighting systems into hung ceilings. Now, these brackets are hung from the structural ceiling and support both furred ceiling and Troffer Lighting System!

The true cost of any lighting system is the *complete* cost, installed and operating.

Miller Fluorescent Troffer Lighting Systems facilitate maintenance because they are engineered to assure *continuing* economies of operation.

Yes, from first to last, Miller Fluorescent Troffer Lighting Systems are an outstanding achievement of our times!

Miller field engineers are conveniently located to serve you.

THE MILLER COMPANY • MERIDEN, CONNECTICUT

MILLER
SINCE 1844

ILLUMINATING DIVISION
Fluorescent, Incandescent
Mercury Lighting Equipment

OIL GOODS DIVISION
Domestic Oil Burners
and Liquid Fuel Devices

ROLLING MILL DIVISION
Phosphor Bronze and Brass
in Sheets, Strips and Rolls

WAR CONTRACTS DIVISION
War Materiel

ARCHITECTURAL RECORD (Vol. 98, No. 1, July 1945) is published monthly by F. W. Dodge Corp., 34 No. Crystal
East Stroudsburg, Pa., with editorial and executive offices at 119 W. 40th St., New York 18, N. Y. $3 per year; Foreign,
Entered as second class matter, May 27, 1942, at the Post Office, East Stroudsburg, Pa., under the Act of March 3, 18

ARCHITECTURAL

RECORD

COMBINED WITH AMERICAN ARCHITECT AND ARCHITECTURE

VOL. 98 • NO. 1

JULY • 1945

HOW DO YOU JUDGE A HOUSE? 65
An Editorial . . . by Kenneth K. Stowell

BUILDING TYPES STUDY No. 103 . . . ***HIGHWAY HOTELS*** 66

FOR "HOTEL COMFORT" SUMMER AND WINTER 68
Outpost Inn. Francis Keally, A.I.A., Architect. Arthur W. Dana, Restaurant Consultant

A RESTAURANT PLAN FOR A COMPLETE "OUTPOST INN" 72
By Arthur W. Dana, Restaurant Consultant. Francis R. Keally, A.I.A., Architect

MOTOR TRAVELER'S HOTEL 75
Charles D. Wiley, Norman Fletcher and Jean Bodman Fletcher, Architects

AIRPORT HOTEL KEEPS PACE WITH PLANES 78
J. Gordon Carr, Architect

LARGE SCHOOL WITH UNUSUAL CLASSROOM SYSTEM 80
Lakeside Union Elementary School, Kern County, California. Frank Wynkoop and Associates, Architects and Engineers

COMMUNITY AUDITORIUM AS NUCLEUS OF SCHOOL 87
Delano High School, California. Frank Wynkoop and Associates, Architects and Engineers

ADVANCES IN THE ART OF SCHOOL-ROOM DAYLIGHTING 90
By Frank Wynkoop, A.I.A.

A WAR SCHOOL WITH NEW USE OF GLASS AND COLOR 94
Jackson School, Wayne County, Michigan. O'Dell, Hewlett and Luckenbach, Architects

A HOUSE DIVIDED FOR OUTDOOR DIVIDENDS 96
Residence for Mr. and Mrs. Michel Weill, Los Gatos, California. Gardner A. Dailey and Associates, Architects. Thomas D. Church, Landscape Architect; Mrs. Michel Weill, Decorator

VACATION HOUSE 100
Country House for Mr. and Mrs. James Vigeveno, Ojai Valley, California. J. R. Davidson, Designer

TO START A NEW TOWN 104
Residence for Mr. and Mrs. Paul McMillin, Roche Harbor, Washington. J. Lister Holmes and Associates, Architects

YOUTZ UNIT SYSTEM OF PREFABRICATION 105

TIME-SAVER STANDARDS . . . The Household Laundry 109
Larch C. Renshaw, A.I.A.

THE RECORD REPORTS . . . News from the Field 7

FOR BETTER BUILDING 20
News of Materials, Equipment and Methods

REQUIRED READING 114

INDEX TO ADVERTISEMENTS 162

F. W. DODGE CORPORATION

H. JUDD PAYNE, Vice-President in charge of Magazine Division • **Copyright 1945 with all rights reserved F. W. DODGE CORPORATION**

EDITOR-IN-CHIEF, Kenneth Kingsley Stowell, A.I.A.; Managing Editor, Emerson Goble; Associate Editor, Douglas Haskell; Associate in South America, Edmund J. Whiting, A.I.A.; Assistant Editor, Jeffrey H. Livingstone; Desk Editor, Florence A. van Wyck; Art Director, W. K. Allen. CONSULTANTS: Industry Relations Consultant: Thomas S. Holden. Statistical Consultant: Clyde Shute. Building Economics Consultant: Norbert Brown. Field Research Consultant: Clifford Dunnells, Jr.

Architectural Record (combined with American Architect and Architecture) is published monthly by F. W. Dodge Corporation, 34 No. Crystal St., East Stroudsburg, Pa., with Editorial and Executive Offices at 119 West 40th Street, New York, N. Y. Thomas S. Holden, Pres.; Howard J. Barringer, Vice-Pres. and Treas.; Irving W. Hadsell, Vice-Pres.; Chauncey L. Williams, Vice-Pres.; Sanford D. Stockton, Jr., Secy.; Walter F. De Saix, Asst. Treas.; Edwin H. Freed, Asst. Treas. Member Audit Bureau of Circulation and Associated Business Papers, Inc. Architectural Record is indexed in Reader's Guide, Art Index and Industrial Arts Index. Subscription rates: United States and Possessions, Canada, Cuba, Mexico, Central and South America, $3 the year, $5 for two years, $6 for three years; elsewhere, $5 the year; single copy, $1. Circulation Manager: Marshall Ginn. Every effort will be made to return material submitted for possible publication (if accompanied by stamped, addressed envelope); but the editors and the corporation will not be responsible for loss or damage. Other Dodge Services: Real Estate Record & Builders' Guide, Sweet's Catalog Files, Home Owners' Catalogs, Dodge Reports & Dodge Statistical Research Service.

Every Watrous Flush Valve has this simple Water-Saver Adjustment

... AND IT MEANS EXTRA SAVINGS TO WATROUS OWNERS

. . . another Watrous point of superiority

Flush valves save water. That is one of the big reasons why they are so widely used today.

Some flush valves save a great deal more water than others because they can be readily adjusted to the actual needs of the fixture on which they are installed.

Fixtures vary in their water requirements—frequently as much as one gallon or more per flush can be saved by proper adjustment. In a building with 200 flush valves this saving could amount to 1,168,000 gallons annually. Water savings like this mean appreciably lower water bills, lower pumping costs. Judge the savings for your buildings from table below.

When you specify Watrous Flush Valves, you make it possible to obtain maximum water savings on *every* fixture—because every Watrous Flush Valve, in both diaphragm and piston types, is equipped with a Water-Saver Adjustment.

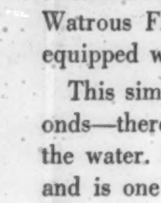
This simple screw driver adjustment requires only a few seconds—there is no need to take the valve apart, or even shut off the water. It assures greater water savings to Watrous owners, and is one of the reasons why the selection of Watrous Flush Valves is a source of constant satisfaction over the years to everyone concerned.

• Watrous Majestic Flush Valve being adjusted. Simply unscrew cap nut and turn adjusting screw to increase or decrease length of flush.

Estimated annual savings of water obtainable through proper regulation of flush valve to actual water needs of the fixture

	Building with 100 Flush Valves	Building with 500 Flush Valves	Project with 1000 Flush Valves
When average of ½ gal. saved per flush	292,000 gallons	1,460,000 gallons	2,920,000 gallons
When average of 1 gal. saved per flush	584,000 gallons	2,920,000 gallons	5,840,000 gallons

THE IMPERIAL BRASS MANUFACTURING COMPANY
1240 W. Harrison St., Chicago 7, Illinois



For complete information on Watrous Flush Valves, see Sweet's Catalog or write for Catalog No. 448-A. Also ask for Bulletin No. 477 giving a summary of "Architects' Views on Flush Valve Applications."

Watrous Flush Valves

THEY PAY FOR THEMSELVES IN THE WATER THEY SAVE

architecture
abrahams
5-13-47
shortage

THE RECORD REPORTS

Freight Rate Decisions Affects Materials Shipments • Lumber Supply • Relaxation of Controls • New Price Study • Postwar Diagnosis • Vapor Condensation

THREE major governmental developments not directly in the field of construction are of high importance to the building industry.

First, shipment of construction materials in practically all parts of the country, except the West Coast, will be hit by a freight rate decision of the Interstate Commerce Commission. The decision requires an adjustment of rail rates, effective at the end of August, in the East, the South, and the Mid-West. Increases will come in the East and reductions in the South and West.

Second, the Supreme Court has handed down a decision which requires the billing of freight costs from shipping rather than from basing points.

Third, the Office of Price Administration has increased basic steel prices. These increases represent an over-all boost of between 1 and 2 per cent.

Perhaps most significant from the long-range standpoint, top Washington men feel, is the ICC rail rate decision. In their opinion this not only will affect shipments but also will cause fundamental changes in national manufacturing plans and marketing centers. Some believe that it will bring about construction of branch plants and result in development of new industries on a regional basis.

Lumber Supply

As to current construction activity, war agency men look for an improved but uncertain lumber supply for civilian construction. J. Philip Boyd, chairman of the New WPB-sponsored Interagency Committee on Lumber, pointing to an increased allocation for the July-September quarter, advises that recent cutbacks in military programs, when their full effects are felt, probably will make possible further expansion of construction activities. In view of this, the WPB Requirements Committee arranged for a mid-July review of the lumber situation to readjust the third quarter allotments from currently established reserves and unused allotments.

Initial third quarter allocations, as follow, are indicative of the present picture: total, 8.8 billion board feet (3 per cent above second quarter and 15 per cent above first); large industrial consumers, 4.8 billion; NHA, for residential construction and maintenance and repair, 0.34 billion; farm operations, 0.42 billion; small industrial consumers, 0.29 billion. Four reserves are set up: (1) maintenance, repair and operating supplies, 0.55 billion; (2) uncertified and unrated orders, 0.34 billion; (3) emergency reserve for industrial consumers, 0.10 billion; (4) general reserve, 0.32 billion.

WPB's Building Materials Division, it should be noted, has jurisdiction over a special account of 54,000,000 board feet for 30,000 units previously approved for the United Kingdom prefabricated housing program.

In a current statement on lumber production, the House Committee on Small Business emphasizes an estimated lumber shortage of 8 billion board feet in 1945. It attributes this to a lack of manpower (estimated 123,000-man shortage) in the lumber industry combined with shortage of equipment, parts and supplies.

Relaxation of Controls

Easing up of WPB construction controls was not expected to bring about a flood of new building. However, the revision of Order L-41 made it possible for small industrial and commercial structures, as well as some housing, to get under way without specific WPB authorization, subject, of course, to the availability of supplies.

Raising of the annual dollar value limits on the various types of construction was significant in various aspects aside from the actual boosting of the limits. In the case of industrial plants, for instance, not only was the limit raised from $5,000 to $25,000, but also the $25,000 limit was extended to apply to all kinds of factories. Previously structures for non-essential civilian goods had been held to a $200 maximum.

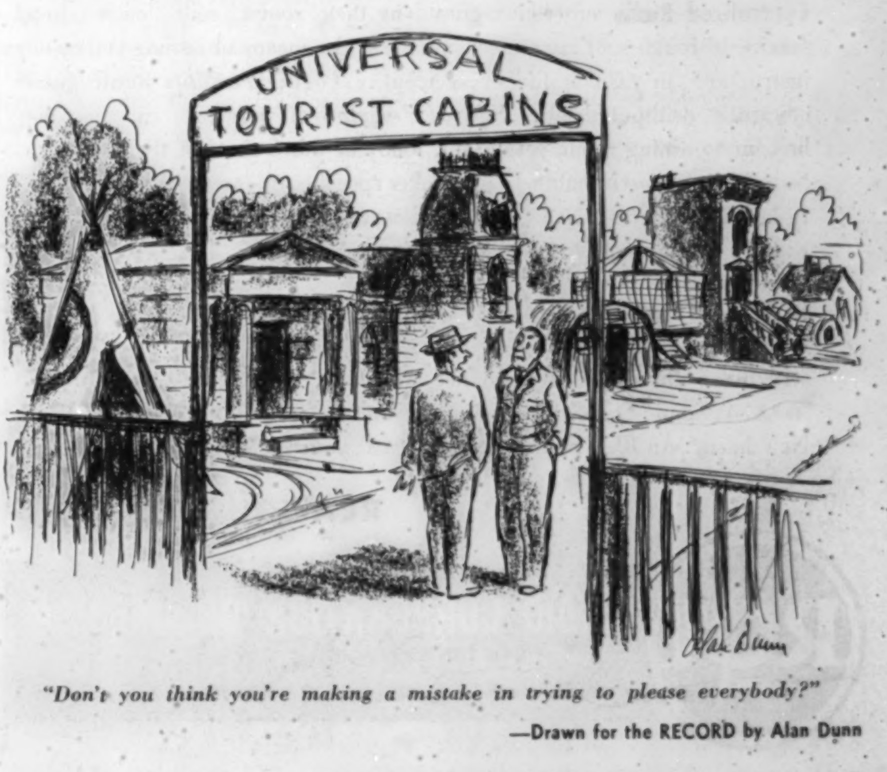
Relaxation of earth-moving operations to permit preparation for future construction, not yet authorized, was designed to facilitate preliminary activity not actually requiring lumber; and particularly to stimulate highway and airport types of construction.

Production of Components

Another goal of the revision was the stimulation not only of actual construction activity but also of industries producing materials and components for construction. As top WPB officials point out, even after the extent of military cutbacks become known, it will take time "to reinstate production, replace lost manpower, and fill the pipelines."

No one is venturing a guess as to how much increased building activity will result from raising the housing cost limits from $200 to a range of from $1,000 to $5,000, costs on hotels

(Continued on page 11)



"Don't you think you're making a mistake in trying to please everybody?"

—Drawn for the RECORD by Alan Dunn

MODERN HOTELS

USE RCA SOUND SYSTEMS TO SELL—MANAGE—ENTERTAIN

Centralized Radio entertains guests in their rooms, sells "extra" hotel services through spot announcements, provides means of issuing emergency instructions in case of fire or accident... *Paging Facilities* locate guests efficiently, without delay... *Selected Programs* of your own choosing may be sent to dining room, restaurant, lobby or other parts of the building... *Sound Reinforcing* in public rooms makes speeches or entertainment available to larger audiences... *Intercommunication Facilities* place manager and staff within instant touch, linking all operating departments.

RCA Sound Systems, Centralized Radio and Intercommunication Facilities —for every hotel need. Design sound into your plans for new or remodeled structures. If you need assistance with your project, write Department 70-137A, Sound Equipment Section, Radio Corporation of America, Camden, New Jersey. An RCA Sound Specialist is at your service.

RCA SOUND SYSTEMS

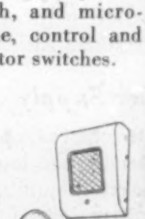
RADIO CORPORATION OF AMERICA
RCA VICTOR DIVISION • CAMDEN, N. J.
LEADS THE WAY... in Radio... Television... Tubes... Phonographs... Records... Electronics

70-6336-137

RCA HOTEL SOUND EQUIPMENT

Amplifier rack—contains radio, phonograph, and microphone, control and selector switches.

Speakers—wall-cabinet and flush-mounted type for inside use; horn-baffle type for outdoor use.



Microphones—dynamic and velocity types in either table or floor-stand mountings.

Intercom units—for intercommunication between key persons and operating departments.

BUY WAR BONDS

TI

and
the
hos
on
infl
the
abl
re-a
A
ma
fact
duc
wa
into
are
ma
con
pan
bein

Av

T
lum
be
The
scre
T
of o
the
In
con
clay
St
imp
In
tigh
Pl
in p
is li
Ev
ing
its r
sion
WP
ratin
stan
taled
and
costs
veal
struc
tries.

WP

Ce
aside
latio
of W
appli
age f
ment
ture
hamp
powe
critica
and

THE RECORD REPORTS

(Continued from page 7)

and apartment buildings, offices, stores, theaters, etc., to $5,000, on churches, hospitals, schools, etc., to $10,000, and on industrial plants to $25,000. One influencing factor, say officials, will be the amount of additional lumber available as a result of the anticipated July re-allocation for the third quarter.

As to industrial plants, WPB Chairman Krug points out that many manufacturers who have developed new production techniques in war work will want to carry over these techniques into civilian production, and old plants are not suitable for such techniques in many cases. He foresees a substantial continuing volume of new plant expansion even while existing plants are being closed down.

Availability of Materials

Three material items in addition to lumber have been and will continue to be bottlenecks in most construction. They are cast iron soil pipe, wire screening, and electrical fixtures.

Tentative estimates of the availability of other materials as of June point up the following:

In fair or good supply are cement, concrete products, brick, structural clay tile, and clay sewer pipe.

Steel shape and plate supplies are improving, but not other steel products.

In lumber, hardwood particularly is tight as are also plywood and shingles.

Plumbing materials and fixtures are in poor supply and heating equipment is limited.

Even before the relaxation of building controls, industry began piling in its requests for preliminary reconversion construction and equipment and WPB began authorizing preference ratings. In April and May, for instance, requests and authorizations totaled over $115,000,000 for buildings and equipment, and other construction costs, excluding land. WPB studies reveal a wide variance in immediate construction needs in the different industries.

WPB Building Items

Certain building items of interest, aside from the general easing of regulations, include announced intentions of WPB to allow approval of some applications for putting up indoor storage facilities for transportation equipment. The building of new motion picture theaters for civilian use will be hampered not only by lumber, manpower and other shortages, but also by critical shortages of seating, of textiles, and of projection and sound equipment. Many theater applications are pending. Special pressure has been brought to allow more construction work on hotels.

Note that WPB is operating in part through special reconversion chairmen. Of interest to the construction industry are the following: C. P. Redick for the Building Materials Division; R. C. Adams for the Construction Machinery Division; J. E. Cole for the Cork, Asbestos and Fibrous Glass Division; J. N. Winton for the Lumber and Lumber Products Division; and P. J. Schaack for the Plumbing and Heating Division.

Veterans' Hospitals

Construction of Veterans Administration hospitals or additions in 72 communities has been proposed to the Federal Board of Hospitalization by the Veterans Administrator, Brig. Gen. Frank T. Hines. In the program are 26 new (and 16 additions to) general medical and surgical hospitals, six new (and nine additions to) neuro-psychiatric hospitals, four new (and five additions to) tuberculosis hospitals, and six structures for domiciliary beneficiaries.

New Price Study

Real estate brokers in Washington, D. C., are working with the National Housing Agency to study price fluctuations in the $5,000 to $16,000 housing group. For survey purposes, the Washington Metropolitan area was cut up into 40 residential zones and price estimates on selected houses were asked of brokers by NHA for both last year and 1940. Methods used may set a pattern for application to other cities. They may also serve as a basis for determining price movements within the various sections of cities.

Postwar Diagnosis

A diagnosis of postwar housing problems has been drawn up by the Commissioner of the Federal Public Housing Authority, Philip M. Klutznick. Presented originally in an address in Detroit late in May, it is of wide national interest.

Mr. Klutznick calls for large and continuous production as a means of making better housing available at lower cost. Due to seasonal and cyclical fluctuations, he says, the houses that are built are bearing in part the cost of houses that are never built. Greater stability of employment, better annual incomes for construction labor and the production of many more houses, he emphasizes, can bring some reduction in per unit cost.

Building codes should be modern-

(Continued on page 12)

Already Back The Trend Toward
Electric
WATER HEATERS

The swing is distinctly upward! An extensive survey made for the National Electrical Manufacturers Association, shows that 35% of today's home owners who plan to replace their present water heaters, intend to buy an electric water heater.

WHY? . . . Because the electric water heater is

SAFE—Flameless, fumeless.
CLEAN—Smokeless, sootless.
EASILY INSTALLED—Requires no flues, vents, lengthy hot water pipes.
TROUBLE FREE—as electric light.

Give home-builders and buyers what they want. Include an electric water heater in every home you build. Then *you'll* be in line with the times.

ELECTRIC WATER HEATER SECTION
NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION

CLARK • ELECTROMASTER • FRIGIDAIRE • GENERAL ELECTRIC • HOTPOINT • HOTSTREAM • KELVINATOR • MONARCH • NORGE • PEMCO • REX • RHEEM • SELECTRIC • THERMOGRAY • THERMO-WATT • UNIVERSAL • WESTINGHOUSE

A House Wired For An ELECTRIC RANGE Is Already
wired
for an
Electric
WATER HEATER!

Your
WEATHERPROOF
VAN DYKE
never runs
when it rains
EBERHARD FABER U.S.A. WEATHERPROOF VAN DYKE -5626-

Pick up your Weatherproof Van Dyke —rain or shine—and feel sure its color will never run. It's the all-weather pencil with the new insoluble lead that insures greater Pigment-to-Paper Writeability... better legibility. Use any one of its 24 brilliant, easy-to-point colors for charts, drawings—or whenever you need MOISTURE PROOF MARKS. Sold in single colors and sets of 12 or 24.

5605 SKY BLUE	5622 ORANGE
5606 CARMINE	5623 BROWN
5607 YELLOW	5624 VIOLET
5608 SAP GREEN	5625 BLUE
5611 WHITE	5626 RED
5613 TERRA COTTA	5628 GREEN
5614 PURPLE	5629 BLACK
5615 LIGHT BLUE	5633 GOLD OCHRE
5616 MADDER RED	5637 DARK YELLOW
5617 LEMON YELLOW	5648 OLIVE
5618 LIGHT GREEN	5686 MADDER PINK
5619 GRAY	5683 VAN DYKE BROWN

5640 COMBINATION RED AND BLUE

FREE SAMPLE

Send for one of These Colors and See for Yourself

It's made by

EBERHARD FABER

Leadership

IN FINE WRITING MATERIALS SINCE 1849

EBERHARD FABER, Dept. AR-7, 37 Greenpoint Ave., Brooklyn 22, N.Y.

For test examination send FREE one of your No._______Weatherproof Van Dyke Pencils.

Name__________ Position__________
Firm Name__________
Firm Address__________
City__________
Source of Supply__________

THE RECORD REPORTS

(Continued from page 11)

ized, he says, made flexible, kept up to date, and based on minimum standards and basic principles rather than rigid specifications of material.

Other points in the diagnosis include: need for improvement in financing low-cost or low-rent homes; need for rental housing; need for a land assembly program to reclaim large urban areas, to halt dispersion to suburbs, and to provide interior land at use value.

The FPHA Commissioner suggests as well that substantial aids be considered to continue the effective production of the small builder in the postwar period.

Data on Industry Trends

Among recent requests to the Congress for funds is one from the Department of Commerce for $150,000 to assemble and analyze data on construction industry trends. "Although the construction industry represents one of the most important segments of our national economy," says the Department, "the information now available on that industry is fragmentary and scattered. Various federal agencies collect facts concerning special phases of construction, but these facts are not drawn together at any single point to present a picture of the industry as a whole."

At the same time the Congress had before it a bill to authorize an additional $30 million for National Defense Housing. The added funds are designed to provide essential public services in National Defense areas, including the maintenance and operation of schools in such areas. The legislation includes a provision for increasing the total amount that may be allocated for contributions for the maintenance and operation of public works.

Vapor Condensation

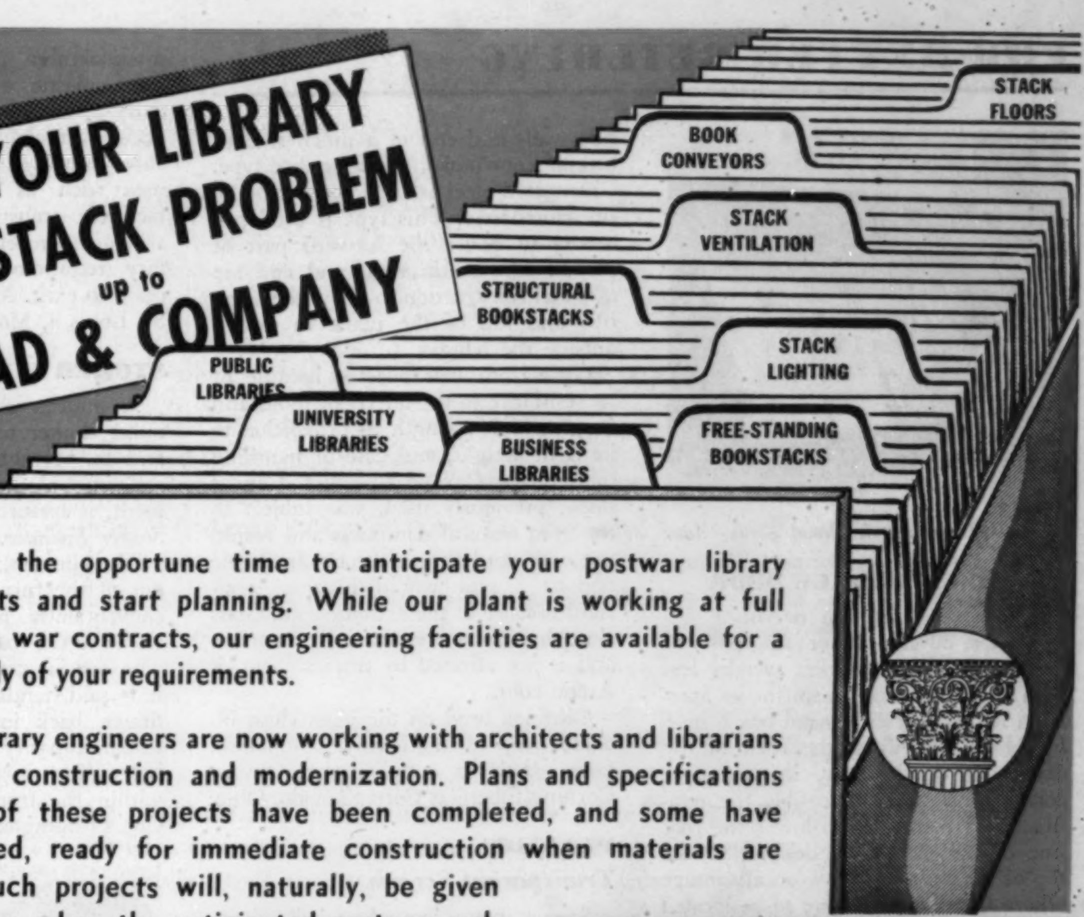
Architects and construction men generally can now obtain through WPB's Office of Production Research and Development a copy of a preliminary report on prevention of vapor condensation in walls and ceilings. The report includes a summary of all work done to date in correcting such moisture condensation. Though published by WPB, it was compiled by the University of Michigan.

Three methods are cited in the study as the best means of preventing inner wall and ceiling condensation. They are:

1. To reduce humidity inside the building.
2. To make the inner wall structure

(Continued on page 120)

PUT YOUR LIBRARY BOOKSTACK PROBLEM up to SNEAD & COMPANY



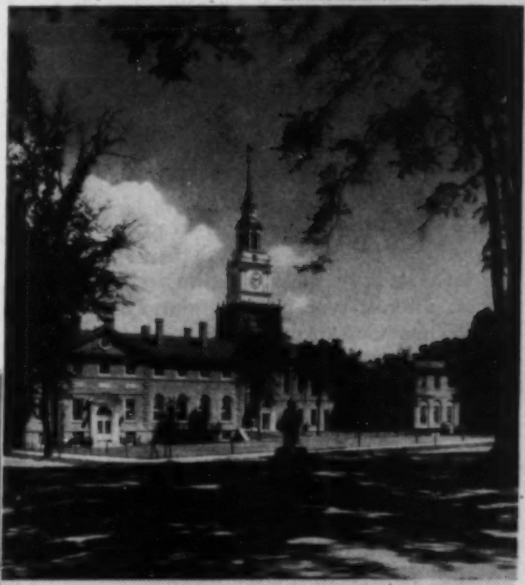
NOW is the opportune time to anticipate your postwar library requirements and start planning. While our plant is working at full capacity on war contracts, our engineering facilities are available for a careful study of your requirements.

Snead library engineers are now working with architects and librarians on postwar construction and modernization. Plans and specifications for many of these projects have been completed, and some have been ordered, ready for immediate construction when materials are released. Such projects will, naturally, be given priority by us when the anticipated postwar rush for deliveries materializes.

We will be glad to place at your disposal our wide experience in library design and construction, without cost or obligation. Our engineers will help you prepare plans and specifications, and will submit a mutually protective bid. Write us.

Send for Snead & Company's free illustrated book on library planning and construction. Here are some of its contents:

Procedure and Planning • Shelving for Small Libraries • Special Purpose Shelving • Newspaper Stacks • Stack Floors, Stairs, Ventilation and Lighting • Communication Between Stacks • Shelf and Stack Data



Baker Memorial Library
Dartmouth College, Hanover, N. H.
JENS FREDERICK LARSON, Architect

While the exterior of this outstanding American library was designed to harmonize with old surrounding buildings, its equipment fulfills the complex requirements of modern library usage. The library was equipped with Snead bracket stacks with closed ends, Snead Stack Aisle Light Reflectors, U-bar shelves with hinged brackets, and Snead concrete decks.

SNEAD & COMPANY

FOUNDED 1849

Designers, manufacturers and erectors of metal equipment

Sales Office—96 Pine Street, Jersey City, N. J.

Main Office and Plant—Orange, Va.

FOR BETTER BUILDING

New all-aluminum overhead garage door

ALUMINUM GARAGE DOOR

A new all-aluminum overhead garage door developed for the postwar residential garage market weighs less than 60 lb. All mechanism for its operation is installed in a metal box 6 by 6 by 24 in. placed on the back of the door, out of the way, in an upper corner. This makes it possible, the manufacturers point out, to lower the roof line of the garage, if desired, to the top of the door opening—an advantage where living quarters are to be located above the garage.

An opening 8 ft. wide betwen the jambs, and 7 ft. high, is all that is required for the installation of the standard size door. Multiple installations of 8-ft. doors can be used without the necessity of installing breaker strips or posts to separate the doors.

The door can be hung and weatherstripped, ready for use, in less than 30 minutes. It is of all aluminum, reinforced, aircraft type construction. The Berry Door Co., Birmingham, Mich.

GLASS CLOTH HANGARS

Glass cloth, woven of glass fiber yarns and coated with either synthetic rubber or resin, has been selected by the U. S. Army Corps of Engineers for curtains, side walls and ends in newly developed airplane hangars installed at advance Army Air Forces bases.

Structural steel framework and coated glass cloth are shipped to the advance bases where the hangars are assembled. Use of coated glass fabric for sections of hangars saves a great amount of shipping weight and speeds assembly.

Two types of hangars incorporating the use of coated glass cloth have been designed by the Corps of Engineers. One is large—162 ft. long, 146 ft. wide and 39 ft. high—capable of housing many planes. Coated glass cloth is used as a curtain or door across the entire 146-ft. span.

Coated glass cloth is used for the side walls and end of a much smaller hangar known as the nose or shed type. Corrugated steel is used for the opposite closed end. This type is used primarily to house the forward part of planes. The fabric walls and end are of panel construction to allow the wing tips and tail of the plane to extend outside the hangar.

Glass cloth was selected because of its resistance to the effects of mold and fungus, high strength in proportion to its light weight, and ease of handling to fit around plane fuselages. Canvas duck, previously used, was subject to rot from tropical dampness and would not withstand fungus attack. In Arctic regions canvas would become semi-rigid because of the extreme cold. Glass cloth has good weathering properties, and is not affected by tropical heat or Arctic cold.

Coatings used on the glass cloth include neoprene and vinyl compound. Glass cloth is supplied by Owens-Corning Fiberglas Corp., Toledo, Ohio.

PLASTICS

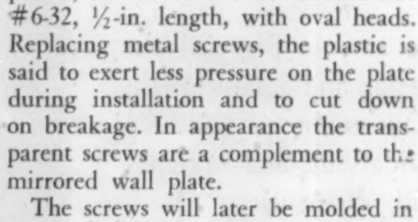
Transparent Screws

Screws for mirrored switch plates, injection-molded of transparent Tenite plastic, are now made in standard size #6-32, ½-in. length, with oval heads. Replacing metal screws, the plastic is said to exert less pressure on the plate during installation and to cut down on breakage. In appearance the transparent screws are a complement to the mirrored wall plate.

The screws will later be molded in sizes ranging from ¼-in. to 1-in., with oval, flat and round heads. They are adaptable to use with a number of different products. Molded by S. S. White Plastics Division, New York City. Switch plates are manufactured by Haring Switch Plate Co., Perkasie, Pa. Tenite is a product of Tennessee Eastman Corp., Kingsport, Tenn.

New Thermoplastic

Monsanto Chemical Company has begun volume production of *Styramic HT,* a new thermoplastic with unusual electrical insulating properties. The manufacturer predicts that the new thermoplastic will contribute substantially to the development of electronic devices. It combines good heat resistance with high insulating efficiency in uses such as radar, television and facsimile transmission. Entire output will go to meet highly classified military requirements until these needs cease to exist. Monsanto Chemical Co., St. Louis 4, Mo.

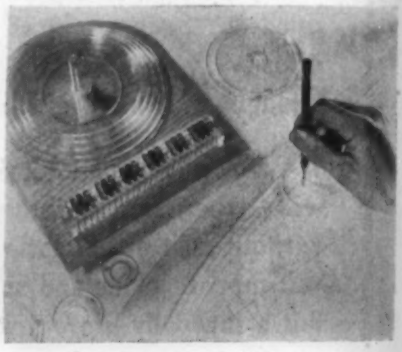


Coated glass cloth is used for walls and ends of AAF advance base hangars

STOKER FURNACE

A built-in clinker compartment to make clinker removal quick and easy, and to prevent dirt and ashes from escaping into furnace room and basement, is featured in the new *Majestic Stoker Furnace.*

The clinkers, instead of being taken out of the furnace, are pushed into a conveniently placed clinker can enclosed in the front panel of the furnace. The special construction of the unit, it is said, tends to cause fly-ash to be drawn back into the fire bowl. The 12-gal. capacity can is easily removed by sliding it from its compartment within the front panel. The Majestic Co., Huntington, Ind.



Plexiglas discs for paralleling curves

PARALLELING SPLINED LINES

A new device to simplify drawing lines parallel to splined lines is a graduated set of Plexiglas disks, selected to take care of ordinary requirements in splining. The procedure consists of inserting a pencil in the center hole of a disk and propelling the disk along the edge of the spline or French curve. Charles A. Jackson, Ferguson, Mo.

MASONRY PAINT

An exterior ready-mixed paint for masonry surfaces, *Mason-Cote,* is said to go safely over damp masonry such as brick, concrete, cement, stucco, cinder block, etc.; to be unaffected by temperature extremes; not subject to saponification caused by masonry alkalinity; and not to become brittle. One coat usually is enough over light colored surfaces, the manufacturers report, or two coats over dark colored surfaces.

(Continued on page 116)

Architecture Library
5-19-47
v. 19

How Do You Judge A House?

◆ Owners, architects, and bankers all exercise critical judgment in their appraisal of a house and their verdicts regarding its "goodness" are likely to be at considerable variance. Their bases of judgment are usually quite different, ranging from the sentimental or emotional to the technological and ideological, to the financial—if not to the economic. All are looking for different values, or rather each emphasizes different aspects of those values. And while each judgment may be quite valid, a summation of all three may be nearest the elusive truth.

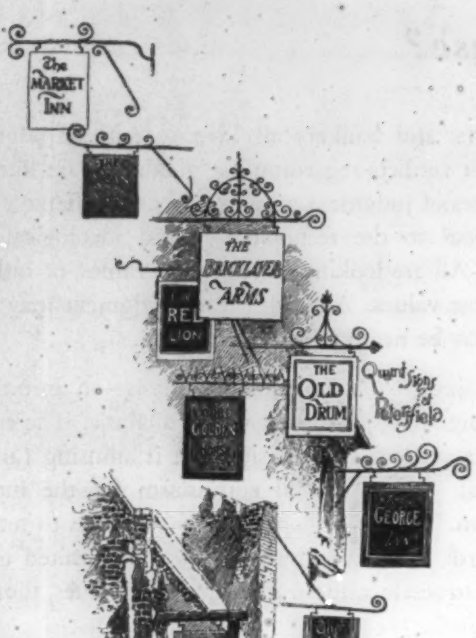
◆ Most houses are judged on an emotional basis—on intuitive likes and dislikes rather than on anything approaching a scientific analysis. The emotional devotion of each architect to his own ideology or design cult is amusing (and sometimes disturbing) to the layman. The emotional enthusiasm for the intellectual approach is heartening and human. Only the money lender attempts to set unemotional and quite objective standards for judgment, and these are limited to money values rather than human values, to resale values rather than use values, though they are, of course, related.

◆ Now seems to be a good time to make a more careful analysis of the trend in house design, the many on-paper designs and the experimental advanced designs that have been built. Dean Joseph Hudnut has weighed them on one front and found them lacking, and his views are more widely acclaimed than hotly denounced. His observations should spur designers on to renewed efforts, should imply a full appraisal of current efforts, an analytical review by each individual designer of his recent designs. Just how far does this change or that indicate real improvement? How much better living conditions—how much greater adequacy, convenience, privacy, safety, economy of time, money, energy—are achieved? How much greater efficiency in use and operation does this house offer? How much greater aesthetic pleasure does it afford both owner and the community? In our enthusiasm for the *new* have we overlooked the *better?* In our desire for the different have we neglected the efficient?

◆ The hard and fast conventions and taboos, the now familiar clichés of "modern" design (which many imitators seem to consider a new period style), can perhaps be re-examined in the light of his comments. Perhaps greater freedom in the creation of form to serve function is still possible. Perhaps more attention can be paid to the proportioning of parts, to the perfecting detail, to the expression of both purpose or feeling through form and color and texture.

◆ Our designs for postwar houses should be analyzed on other fronts than their emotional and spiritual significance. An investigation of the price of the new freedom-in-planning and construction in relation to an appraisal of its *real* advantages over the compact thriftiness of earlier days, is in order. That price may be found in increased operating, maintenance, and repair costs, but the new atmosphere, environment or facilities created by the free-planning technique may well be worth their cost. Until more scientific methods of appraisal of values is developed and has some universal acceptance, you and I, and the owner, and the banker will continue to judge houses in our own sweet ways. So—just how *do you* judge a house?

Kenneth K Stowell
EDITOR



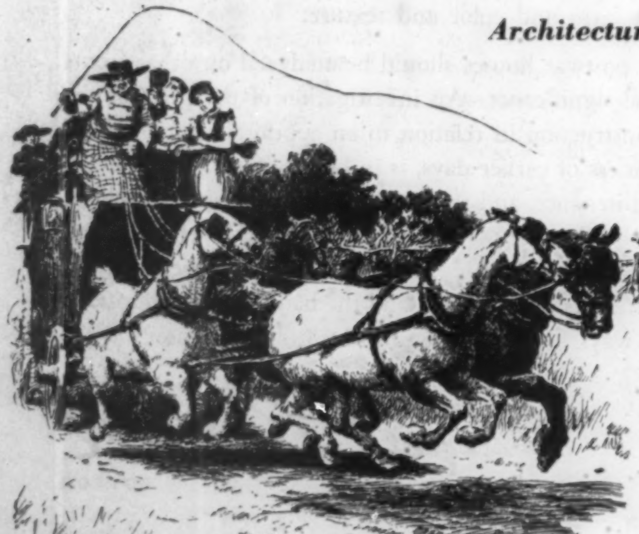
HIGHWAY

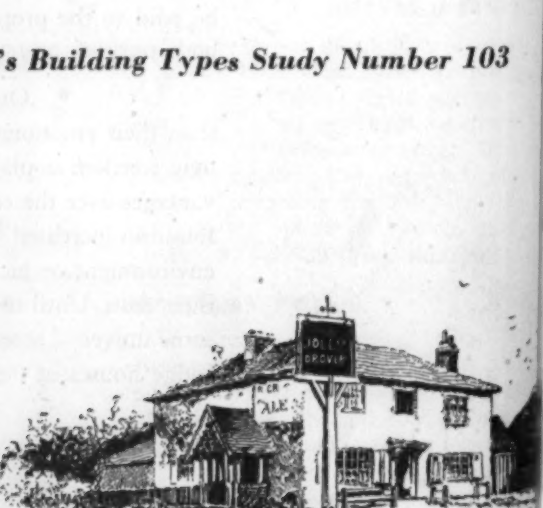
It may seem like a far cry from the inns and hostelries so charmingly described and depicted in "Coaching Days and Coaching Ways,"* to the modern highway hotel, yet fundamentally, the picturesque inns along the post roads performed the same functions for their day as the most modern highway hotel does for ours. Both serve the needs of the traveler, cater to his comfort and convenience, provide the necessities of food and shelter. True, the road itself has changed and is straightened out, the vehicles have horsepower but no horses—the private car, the commodious bus, and the straight-flying plane. Yet the hotelman of today is essentially the innkeeper of yesterday—the gracious, cordial, thoughtful host and provider. His means and his environment are new but he meets and treats his clients on the same personal plane. His clients are still tired, hungry, bored—the host himself genial, capable, obliging.

Both hotel managers and architects need to keep this fundamental thought in mind, for such human relationships influence the planning of the highway hotel at every turn! Each part of the building must function primarily to serve the traveler. The hotel management is concerned with how this physical plant can be managed and operated to serve the guest most satisfactorily with the least effort and expenditure of time, money, and energy.

A glance at the illustrations on this page will immediately suggest the present-day counterparts of hotel service. The signs recall the importance of proper location, of advertising, of an easily remembered name, and one that is in addition "a good name," in the sense of reputation. Carving the roast brings to mind, besides fond recollections, the necessary facilities for food and drink that account for so much space in the hotel building and so much

Architectural Record's Building Types Study Number 103





HOTELS

volume in the profit-and-loss statement. Grooms to care for the traveler's horses have given place to the attendants who care for the family car and parking space, convenient, accessible, and protected, takes the place of the picturesque innyard.

The unprecedented hotel business brought on by war activity does not indicate in most cities the need for more large centrally-located hotels. However, the modernizing of such hotels will undoubtedly be one of the first orders of the day. This subject was treated at length in the January 1944 issues of ARCHITECTURAL RECORD and HOTEL MANAGEMENT. The need for hotel facilities in rural areas, in small communities, and on the periphery of metropolitan areas will grow with the resumption of travel by individual car. Providing better accommodations than the rather hit-and-miss developments of trailer camps and cabins seems to offer possibilities for both new and established hotel interests.

With the air becoming the highest of highways, added hotel facilities will be needed at the airports. With these things in mind, we present ideas for three differing types of highway hotels: 1. The "outpost-inn" or out-of-town hotel for immediate postwar construction, with its own restaurant and recreation facilities, including cabins for either a short or long stay. 2. The hotel for a small community along the lines of possible development in the far future, with imagination given full rein in design. 3. The type of hotel and its facilities that may well be developed now in connection with current plans for airports. The detailed analysis of the hotel's food department is both specific in regard to a particular problem and general as indicating a proper architectural and technical approach.

***in collaboration with* Hotel Management**

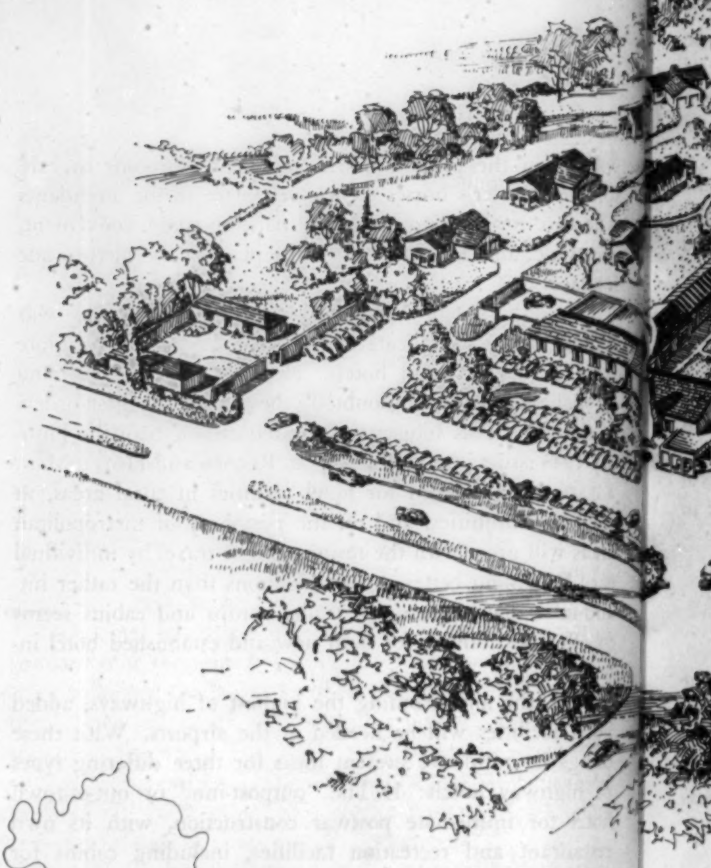
**Illustrations from "Coaching Days and Coaching Ways" by W. Outram Tristram, courtesy Macmillan and Co., publishers*

FOR "HOTEL COMFORT" SUMMER AND WINTER

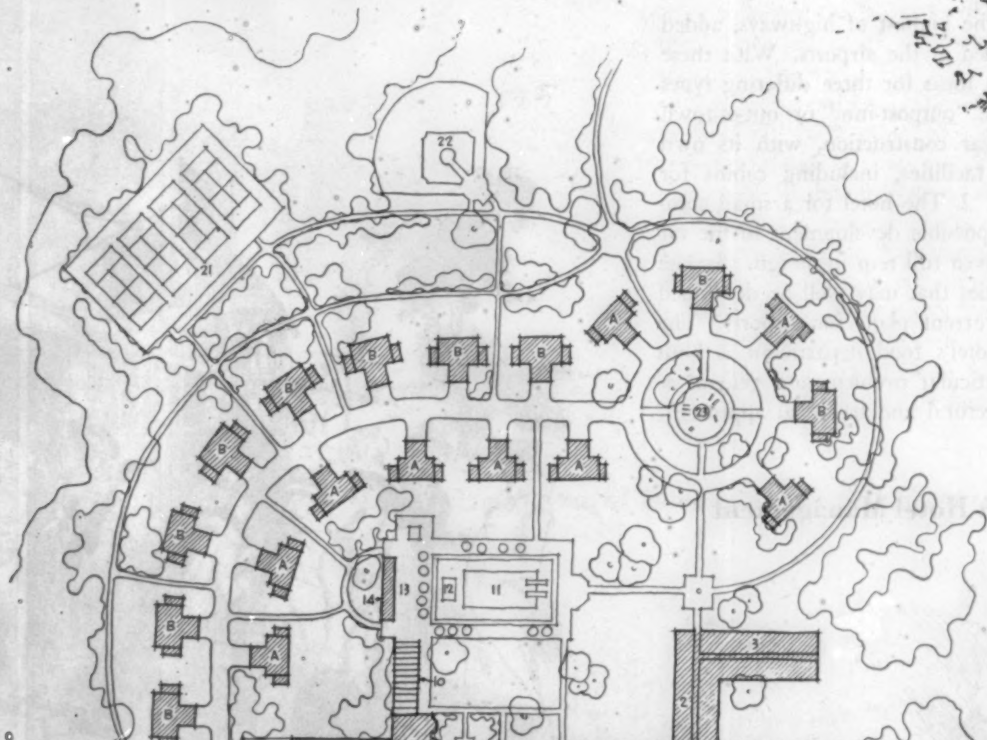
Outpost Inn

Francis Keally, A.I.A., Architect

Arthur W. Dana, Restaurant Consultant



Situated in the country but near a town, the inn provides for dining, swimming, riding (see stables at top of large rendering), baseball, tennis. Swimming pool is recessed, with sloping hard clay banks flooded in winter to raise the ice level above the concrete, preventing damage to expensive construction



LEGEND

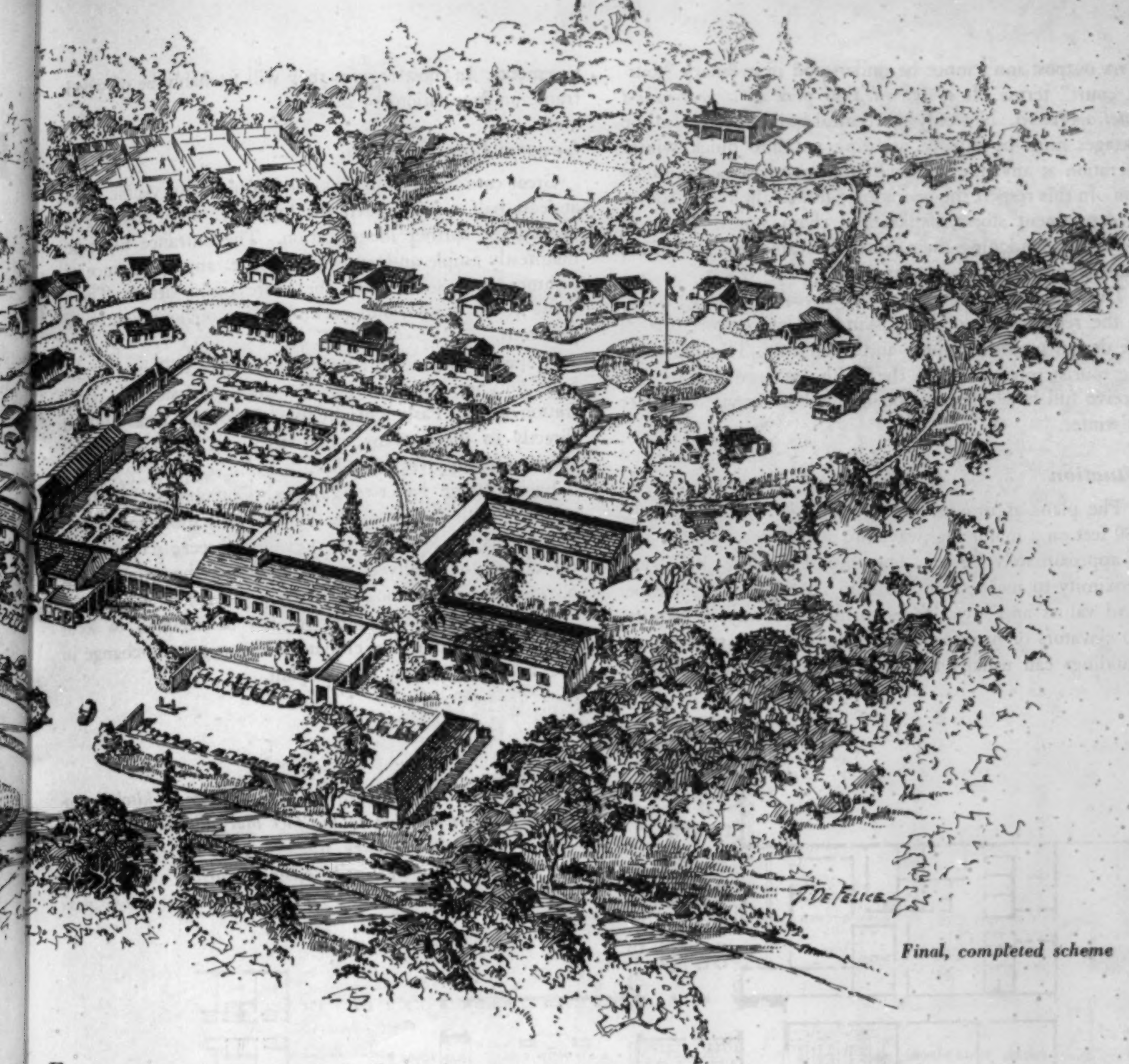
1. HOTEL LOBBY
2. HOTEL BED ROOMS
3. FUTURE BED ROOMS
4. LOUNGE
5. COCKTAIL RM. & BAR
6. DINING ROOM
7. LUNCH COUNTER
8. KITCHEN & STORAGE
9. PRIVATE DINING RMS.
10. OUTDOOR DINING
11. SWIMMING POOL
12. CHILDREN'S POOL
13. TERRACE
14. DRESSING ROOMS
15. MOTOR COURT
16. GARAGE & SERVICE
17. PORTE COCHERE
18. PUBLIC PARK'G & ENTRANC
19. SERVANTS QUARTERS
20. SERVICE YARD
21. TENNIS COURTS
22. SOFT BALL DIAMOND
23. CHILDREN'S PLAY AREA
24. HIGHWAY

FOR
runni
post i
hotel

Th
devel
steady
comp

FIRST

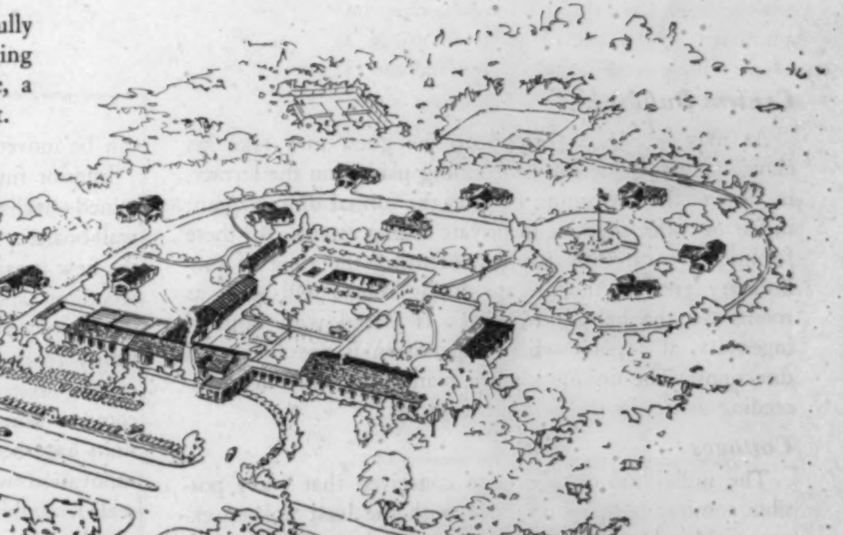
Thoug
plan,
modat
first,



Final, completed scheme

For a number of years, tourist traffic has been running away from the hotel man. The "outpost inn" is conceived as part of a comprehensive hotel program, moved out "into the country."

The view above shows an "outpost inn" fully developed, the result of a master plan envisaging steady growth. Below is seen the first phase, a complete but not too extended initial project.



FIRST PHASE

Though following a master plan, only half the accommodations are provided at first, avoiding undue risk

THE outpost inn cannot be understood in ordinary "tourist court" terms. It is *intended as part of a year-round hotel operation*. Not only the central building but also the cottages must be capable of being put into quick winter operation at any time to serve as an overflow accommodation. In this respect the operation parallels the recent course of department stores, banks, and chain stores. None of these are abandoning their central headquarters but all are establishing branches or outposts.

The requirement of adaptability to year-round use, added to the requirement of hotel standards of comfort, makes the design problem unique and interesting. The approaching tourist must be given the feeling at once that he will receive full hotel service, not just "cabin" service, summer or winter.

Situation

The plans as drawn show a frontage of approximately 900 feet on a major highway, and a total development area of approximately 5 acres. The outpost inn must have close proximity to markets and to help. It depends on cheaper land values and lower taxes to make its way; it requires no elevators or fire-escapes or elaborate alarm systems; the buildings can usually be one-story, non-fireproof, without basements. In most regions they will probably be of wood frame on foundations of masonry.

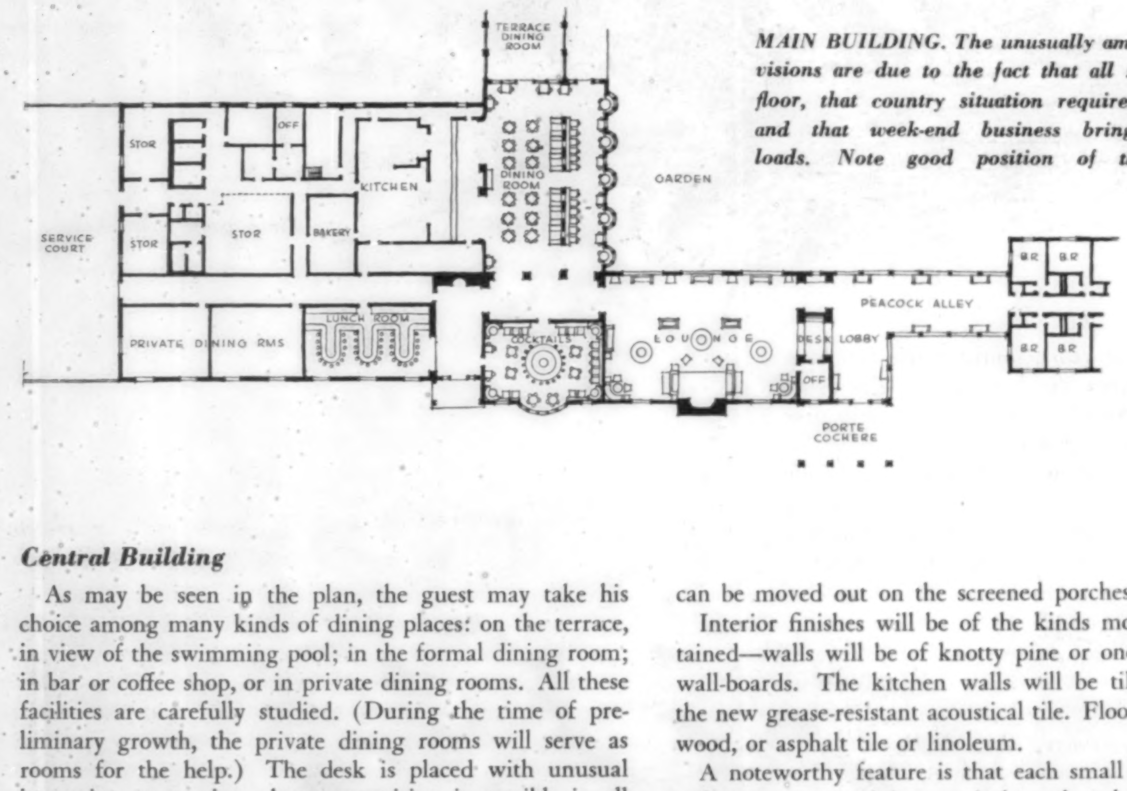
General Plan

Great care is taken to make the outpost inn visible from at least half a mile down the highway; night lighting is needed for further identification. The entrance must be manifestly ample and easy to negotiate: any appearance of tightness will scare away the more timid driver. There must be no grades, and parking space obviously must be generous.

A special motor court serves those who will stay in the hotel building. The tourist's car stops alongside the registration lobby. Passengers by-pass the public areas and go directly to their rooms where they can clean up before showing themselves in public.

Each cottage has two garages. Cottages are carefully oriented with regard to the view. Even more important, perhaps, is the fact that the prevailing breeze sends smoke off across the highway and not across the grounds, an obvious precaution too frequently neglected.

The architectural expression can be adapted to local landscape, custom, and climate with no generic change in the basic disposition of the plan.



MAIN BUILDING. The unusually ample kitchen provisions are due to the fact that all space is on one floor, that country situation requires extra storage, and that week-end business brings heavy peak loads. Note good position of the hotel desk

Central Building

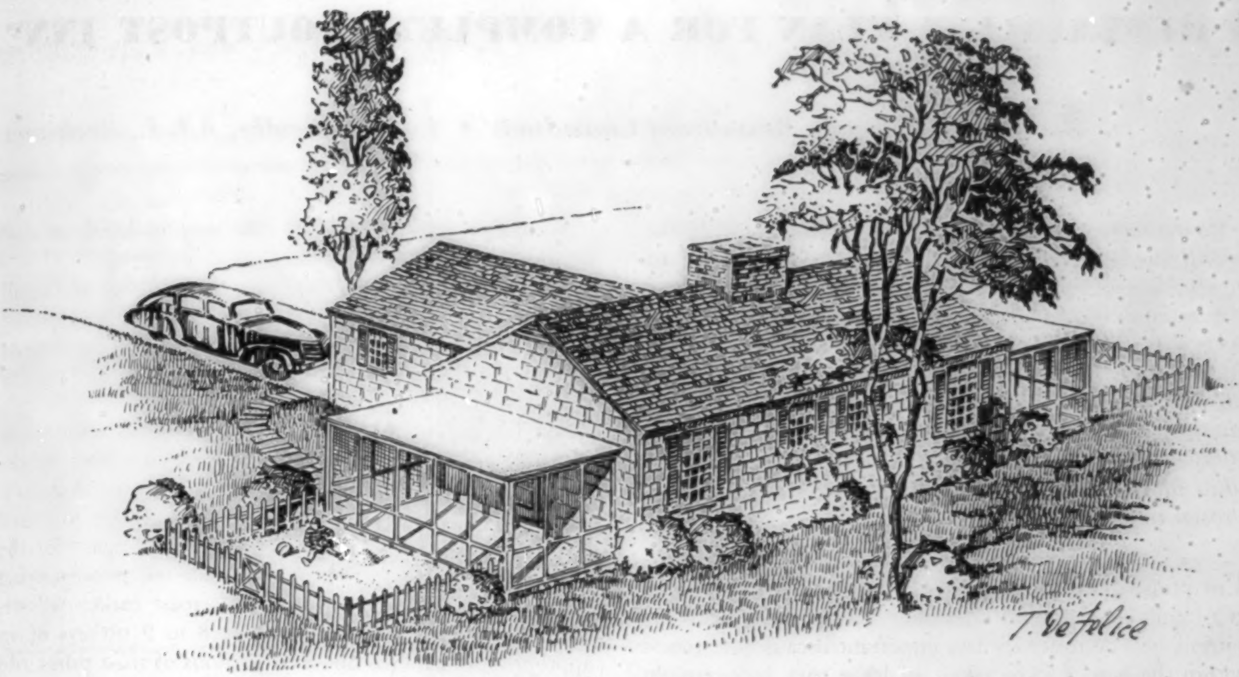
As may be seen in the plan, the guest may take his choice among many kinds of dining places: on the terrace, in view of the swimming pool; in the formal dining room; in bar or coffee shop, or in private dining rooms. All these facilities are carefully studied. (During the time of preliminary growth, the private dining rooms will serve as rooms for the help.) The desk is placed with unusual ingenuity, at a point where supervision is possible in all directions. The unique kitchen plan is discussed in a succeeding article by the consulting expert.

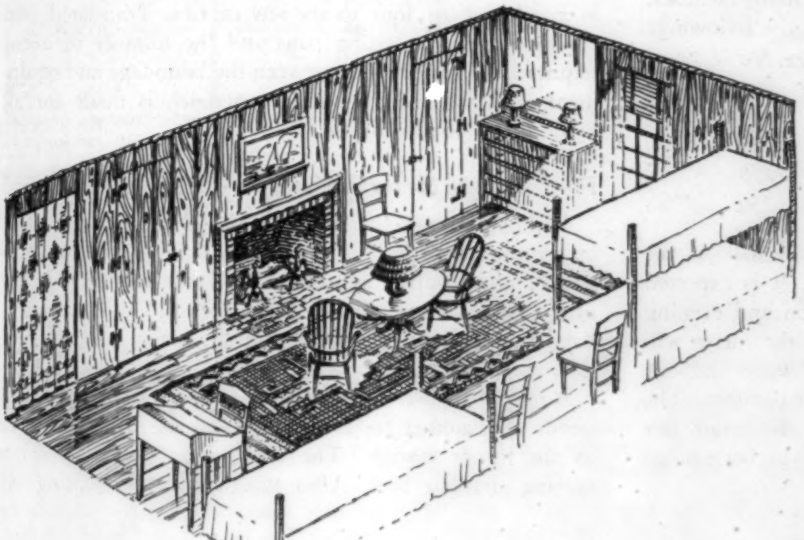
Cottages

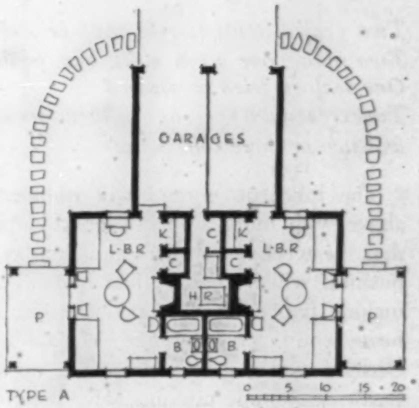
The individual cottage is so conceived that every possible comfort may be provided with the least upkeep expense. Movable double-decker beds can be manipulated in such a way as to achieve every possible combination. If the rental for two people is taken at $6 per day, the addition of upper-deck beds at $2 can bring the total up to four people at an aggregate of $10 with no increased floor-space. Beds can be moved out on the screened porches when desired.

Interior finishes will be of the kinds most easily maintained—walls will be of knotty pine or one of the harder wall-boards. The kitchen walls will be tile, and ceilings the new grease-resistant acoustical tile. Floors will be hardwood, or asphalt tile or linoleum.

A noteworthy feature is that each small building has a utility room containing an independent heating and air-cooling system for summer and winter, supplied by a compact unit using the fuel available in the locality. These units have been developed rapidly during the war. Another innovation will be the use of metal-bound, hermetically sealed, double glazing. Instead of being a luxury, in the mind of the architect this will result in savings in the air conditioning. The winter gain in radiant heat from the sun is not materially lessened by the double glazing, but heat loss by conduction is said to be cut in two, reducing the need for winter heating.

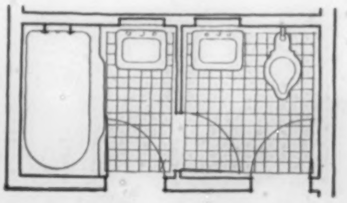




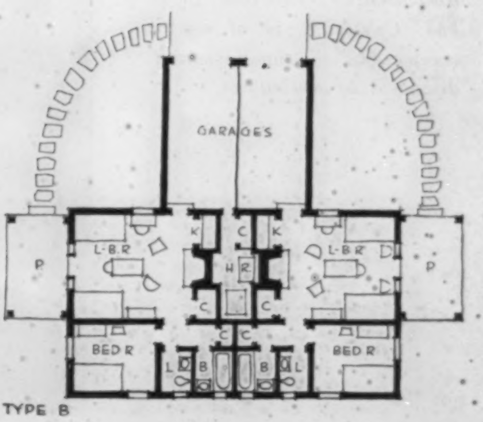


TYPE A

One cottage type is illustrated above, another is shown in plan below, right. Year-round air conditioning, full insulation, sealed double glazing, make cottages instantly available in all seasons. Bath shown in plan below varies slightly from plan shown in box, lower left



***DUO-USE BATHROOM.** By a 33-1/3 per cent increase in floor area and by addition of one lavatory, this bathroom is doubled in usefulness. If a family of four is evenly divided as to sex, all four members can use the bathroom facilities simultaneously. A new idea in America but one which has existed in crude form abroad*



TYPE B

A RESTAURANT PLAN FOR A COMPLETE "OUTPOST INN"

By Arthur W. Dana, Restaurant Consultant • *Francis Keally, A.I.A., Architect*

There seem to be two good reasons for publishing in full the approach of a restaurant expert, down to the listing of 400 portions of reminiscent red beef. One reason is that architects who are restaurant experts will fully understand, and will gain some new ideas. The other is that architects who, like the editors, are not restaurant experts, will become acquainted with the complexity of the factors which make it desirable to have men of specialized knowledge on the design team, as Architect Keally has chosen to do.—Ed.

THE proposed menu policy and pattern is intended to cater to a family type country restaurant. The needs of the hotel patrons will be relatively less important because the rooms within the hotel will be taken, in large part, by overnight patrons and the cottages will have kitchenette facilities. The menu pattern for dinner will consist of the following:

	Max. No. in 2 hrs.
Two grilled items (steak, chop or seafood)	300 portions
Two roasts; one a red meat; one, poultry	400 "
One seafood fried or sauteed	200 "
Two creamed dishes, one of them a seafood,	175 "
and two or three cold plates	150 "
	1225

The luncheon entrees will number about half of the above with more emphasis on cold plates. It is expected that the weekday dinners and Sunday, noon and evening business will be heavy. The remainder of the menu will include two or three appetizers, one clear soup and one heavy soup, two or three vegetables, two potatoes. The desserts will include a closed pie, open pie, ice cream five flavors, cake, one pudding. Hot breads will be both raised dough and baking powder type.

A counter coffee shop will take care of breakfast and late night requirements.

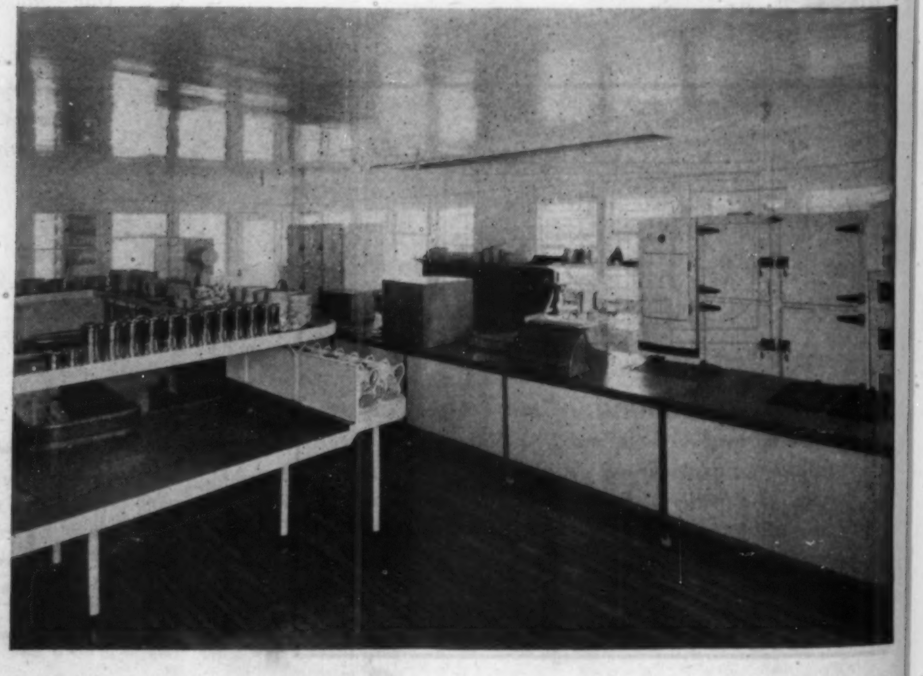
The seating capacity including outdoor dining and small private dining rooms will amount to 400. It is expected that the turnover on Sundays and holidays will be three at noon and three at night with the probability that Saturday turnover will be about as great.

The foregoing estimates of required portions when translated into pounds or gallons will provide the basis for determining equipment and storage requirements. In accordance with the client's desire, it will be possible to install part of the cooking equipment and provide space for the ultimately complete setup, as shown in the accompanying plans. For example, 200 servings of roast turkey will require 150 pounds as purchased, or 8 to 9 turkeys of an appropriate size. Two hundred portions of roast prime ribs of beef will similarly require 150 pounds to 175 pounds as purchased, or four to six sets of ribs. Translated into the capacities of roasting pans and the number of ovens required, the relationship between the poundage and equipment is established. A similar approach is made for all other items on the menu.

Flow of Raw Materials

The opportunity to retain the storage of raw materials on the same floor level as production is most important for merchandise control, as well as for labor energy. Because of the large volume of sales on weekends, and because deliveries of meats, seafood, poultry are not made on Saturday, extra storage space is necessary.

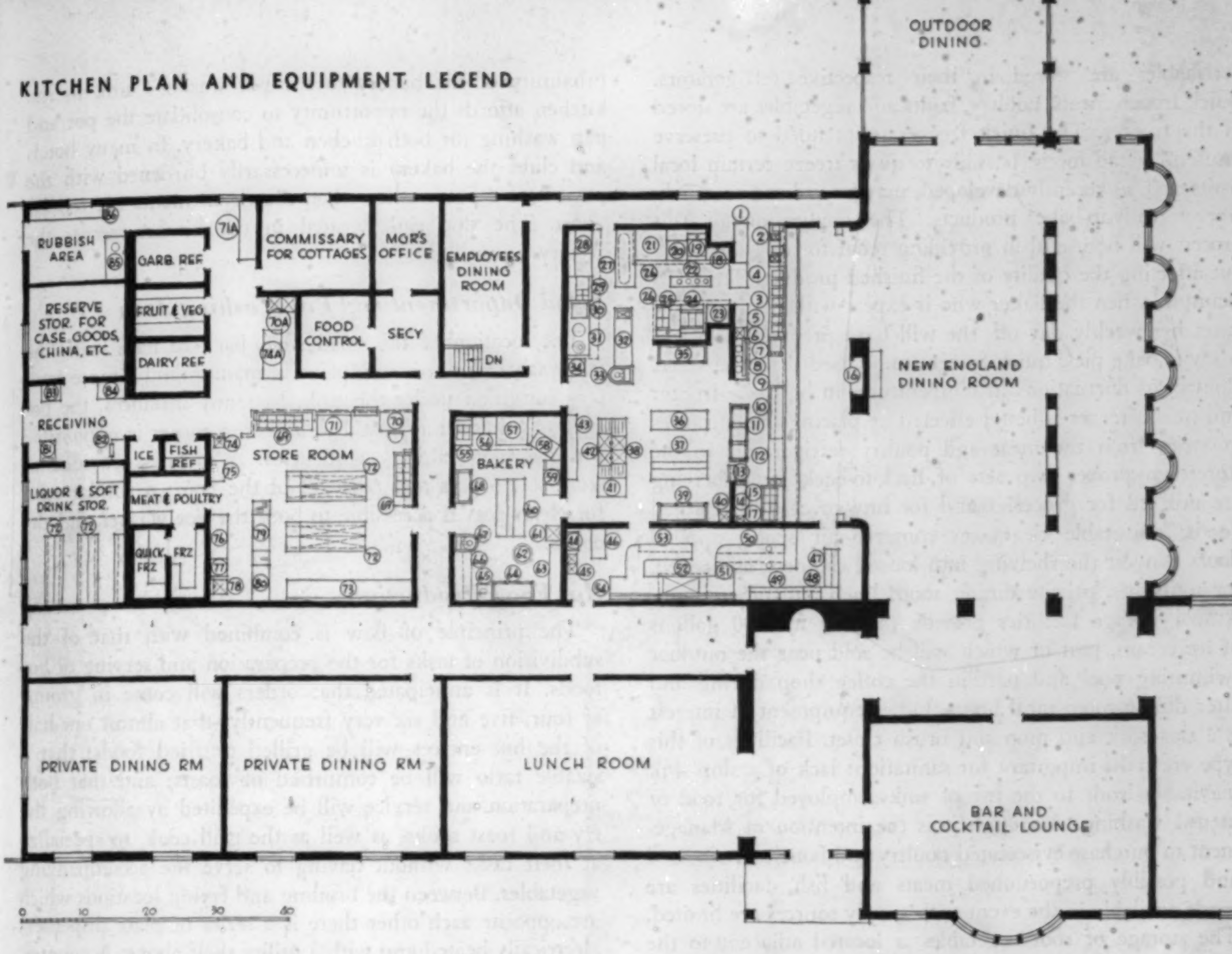
Adjacent to the receiving area is a storeroom for bulk goods and another for cases of bottled soft drinks, as well as for liquor storage. The client does not contemplate serving draught beer. After weighing and checking, all



Restaurant of Twin Inns, Carlsbad, California, is of a size comparable to the restaurant discussed by the author

Watson Airfotos

KITCHEN PLAN AND EQUIPMENT LEGEND



1. Electric Food Warmer
2. Carving stations with electric hot pan, carving board, and plate dispenser
3. S.S. electric hot food table with interchangeable inset panels and two utensil drawers
4. Counter height refrigerated drawers for use by cooks
5. S.S. Utility Table
6. S.S. Utility Sink
7. Cup and saucer dispenser
8. S.S. Urn stand with hood above, two 10-gallon combination urns, one 10-gallon iced tea urn and an insulated ice container below (with drain)
9. Storage (below) of iced drink glasses
10. Electric refrigerator, S.S. cold pan with service shelf over
11. Reach-in refrigerator for salads, fruits, milk, cream, butter
12. Dessert display
13. Pass-through window
14. Dessert dispensing table with plate dispenser
15. Ice cream cabinet and service shelf with dish dispenser and running water well for ice cream scoops
16. Utility stand and 2-4 drawer electric roll warmers
17. S.S. Utility Sink
18. Double deck broiler (gas)
19. Heavy duty broiler (gas)
20. Range size double deck roasting oven
21. Two deck large roasting oven
22. Plate dispenser with shelf over
23. S.S. Utility Table with shelf below
24. Three gas deep fat fryers with thermostatic control, shelf above
25. Gas range with half solid and half open top, shelf above
26. Ventilated hoods with grease filters
27. Cook's work table with pot rack above, drawer and shelf below
28. Two solid top gas ranges and ovens; one with shelf above
29. One gas range top with half solid and half open top for 4-quart pressure cooker
30. Vegetable steamer with three compartments
31. One 25-gallon and one 40-gallon steam-jacketed kettle
32. Cook's work table, utility sink
33. 30-60 quart electric mixer
34. Utility stand for mixer attachments
35. Cook's refrigerator
36. Utility table for electric vegetable cutter
37. Dual salad work table with shelf above and plate and tray storage below. Electric outlet for 4-slice toaster
38. Salad sink and drainboards
39. Salad ingredient refrigerator
40. Slop sink
41. Soiled pot and pan storage rack
42. Pot sink and drainboards
43. Racks for clean pots and pans
44. Silver burnisher
45. Detarnishing and rinsing sink
46. Portable table
47. Soiled glass storage with shelves above and below
48. Electric-friction glass washer
49. Clean glass storage, shelves above and below
50. Soiled dish table with shelf above
51. Pre-rinser
52. Electric dishwasher with ventilation hood above
53. Clean dish table with shelves above and below
54. Silver wiping table
55. Open top cook stove
56. Steam-proof cabinet
57. Multiple deck baking oven
58. Multi-shelved portable wire rack
59. Storage cabinet with sliding doors (for finished goods)
60. Dual baker's table with shelf above. Storage of raw materials under table in seamless cans on casters
61. Baker's sink
62. Portable mixing bowl
63. Racks for clean baking pans
64. Baker's refrigerator
65. Dough divider
66. Work table with shelf below for storage of mixer attachments and shelf above
67. 30-60 quart electric mixer
68. Dough conditioning electric refrigerator
69. Ice cream storage cabinet with shelf above
70. Storekeeper's desk
70A. Vegetable sink, potato peeler
71. Utility table
71A. Storage rack for root vegetables
72. Dual steel shelving and cabinets
73. Floor rack for flour, sugar, drum storage
74. Slop sink
74A. Vegetable work table
75. Mop and broom storage
76. Meat-cutting table
77. Meat-cutting block
78. Meat sink
79. Utility table and electric slicer
80. Utility table, electric meat saw
81. Receiving platform scales
82. Flaked ice maker and trough
83. Receiving desk
84. Utility table
85. Garbage can washer and trough
86. Double deck clean garbage can storage rack

perishables are stored in their respective refrigerators. Quick frozen meats, poultry, fruits and vegetables are stored in the freezer. The quick freezer is intended to preserve unused cooked foods, possibly to quick-freeze certain local fruits and, as recently developed, may be utilized to quick-freeze ready-to-bake products. The application of this process will be useful in providing relief for days off without affecting the quality of the finished product. Thus, for example, when the baker who is expert with her apple pie takes her weekly day off, she will have prepared sufficient ready-to-bake pies, quick-frozen, to be used in her absence. Control of fluctuations in temperatures in both the freezer and quick-freezer is better effected by placing the entrances in series from the meat and poultry refrigerator. In the storeroom proper two sets of back-to-back steel shelving are utilized for groceries and for broken cases of canned goods; adjustable clearances conserve air space; applied doors convert the shelving into locked cabinets, as needed, for uniforms, private dining room linen and other items. Ample storage facilities provide capacity for 100 gallons of ice cream, part of which will be sold near the outdoor swimming pool and part in the coffee shop during and after dining-room meal hours. Other equipment of interest is a slop sink and mop and brush closet. Facilities of this type are most important for sanitation: lack of a slop sink inevitably leads to the use of sinks employed for food or utensil washing. Although it is the intention of Management to purchase eviscerated poultry and boneless, trimmed and possibly preportioned meats and fish, facilities are made available in the event such supply sources are limited. The storage of root vegetables is located adjacent to the potato-peeling equipment; it is desirable to keep as much large-scale vegetable trimmings, crates, etc., out of the kitchen proper, as may be feasible. The location of the preliminary preparation or cleaning of vegetables near the garbage refrigerator and rubbish area is an interesting note.

A small commissary to supply the cottage tenants who have kitchenette facilities is located adjacent to the storeroom. Complete control of storeroom merchandise, as well as of the expensive meat and poultry, is obtained by the storeroom layout. Access to the garage and rubbish area for dishwashers and porters is made possible during the period when the storeroom is closed by a steel fence, as shown on the plan. The Food Control Office is located adjacent to the storeroom.

Production Departments

The bakery is expected to make from twenty to thirty closed pies, forty to fifty open pies, ten to fifteen cakes, fifty to one hundred individual puddings, and, on Saturdays and Sundays, about 4800 pieces of hot breads. A feature of the bakery layout is its compactness with the main work table as the focal point. In addition to a reach-in refrigerator for the storage of pie fillings, dairy products, icings, etc., there is a dough conditioning refrigerator which permits the cutting and shaping of individual pieces of yeast doughs and storing them uncovered under controlled humidity and, of course, temperature. Thus, hundreds of small pecan and honey or other sweet buns can be rolled, cut and stored the afternoon before for baking the next day. Next to the multiple-deck bake oven is a multi-shelved rack which serves as a loading or unloading area as well as a cooling one. A storage cabinet for finished goods is located adjacent to the rack. Another useful item is the storage rack for clean baking pans and utensils. The proximity of the bakery to the pot washer's sink in the kitchen affords the opportunity to consolidate the pot and pan washing for both kitchen and bakery. In many hotels and clubs the bakery is unnecessarily burdened with the payroll of a pot washer when the departments are too far apart. The slop sink located in the kitchen serves the bakery as well.

Salad Department and Pot Washing Area

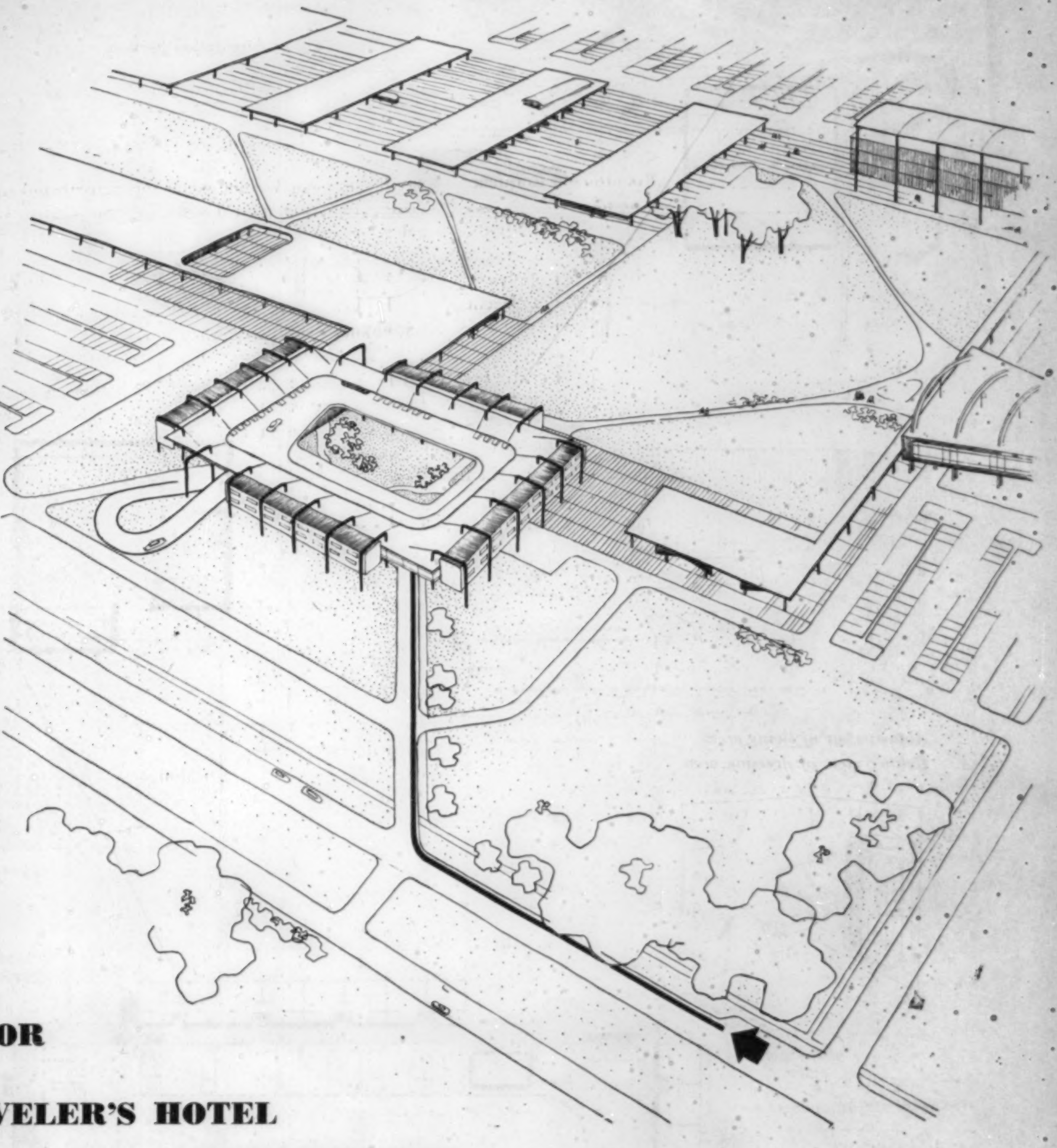
The location of the salad sink, back to back with the pot washer's sink, is conducive to maintaining a more sanitary condition under the sink. In many instances, the pot washer's sink set against a wall or in a corner is responsible for grossly unsanitary tendencies. A rack is provided to store soiled pots and pans off of the floor; a similar rack for clean pots is accessible to both the pot washer and the cooks.

Hot Food Production

The principle of flow is combined with that of the subdivision of tasks for the preparation and serving of hot foods. It is anticipated that orders will come in groups of four, five and six very frequently; that almost one-half of the hot entrees will be grilled or fried foods; that a sizable ratio will be comprised of roasts; and that both preparation and service will be expedited by allowing the fry and roast cooks, as well as the grill cook, to specialize at their tasks without having to serve the accompanying vegetables. Between the broiling and frying locations which are opposite each other there is a series of plate dispensers electrically heated and with a utility shelf above. A counter-height refrigerator with self-closing drawers serves as a source of supply for both the grill and the fry cook and as a resting place for finished products. The hot food table attendants receive the cooked meat, poultry or fish, either from the roast cook, grill cook, or fry cook, and add the necessary accompaniments. Soups and creamed foods, or other casserole dishes, are ready to be served on the hot-food table. The roast cook's station at the front counter is equipped with a warmer and heated plate dispenser. Back of the roast cook counter station is a compartment hot-food storage cabinet for roasts, creamed dishes, etc. Turning to the opposite end of the kitchen, we find one of the ranges with open top burners to be used for 4-quart size pressure cookers. It is proposed that all vegetables, except potatoes, will be cooked in frequent batches by this method. A utility sink is close at hand for quickly cooling the pressure cooker—a necessary procedure in vegetable pressure cookery.

Disposal of Soiled Dishes

A conveyor-belt located under the service counter carries trays of soiled dishes to the dishwashing area which is enclosed and sound-proofed as well as ventilated. On one side of the belt's terminal is the soiled glass storage set of shelves, and on the other side is that for soiled dishes. Space for silver burnishing equipment is provided. The concept of quick accessibility of food service for the waitresses has become increasingly important from the standpoint of obtaining and holding a better class of waitresses and of reducing the energy and steps required in many hotels. A streamlined menu, frequent preparation, fast assembly of orders by the waitresses, will provide the basis for operating economy, customer good will, increasing volume and profits.



MOTOR TRAVELER'S HOTEL

By Charles D. Wiley, Norman Fletcher and Jean Bodman Fletcher, Architects

"A HOTEL," explain the architects, "is the visitor's contact with the community and a focal point of local activities. It should be part of a community group which includes shops, offices, local municipal headquarters, theater and junior high school. The hotel is physically connected to the shops, and provided with lounges opening on the green.

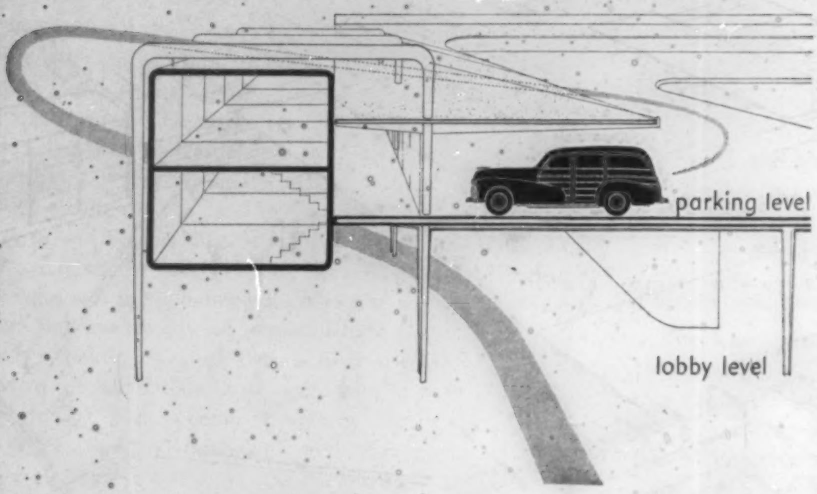
"The traveler DRIVES INTO the hotel. Without leaving his car he is able to register and drive to his room. Rooms are on two levels around a covered parking court where there is PARKING SPACE.

"From his car the guest crosses the glazed corridor and ascends or descends half a level to his room. His car is where he can use it and need not worry about its care. It is a CAR-TO-BED plan.

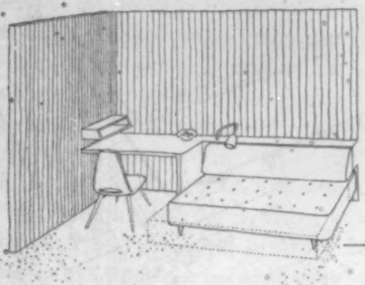
"The ROOM is arranged to be used single or double. The bulky dresser is gone, the closet is gone, and in their place is a dressing unit containing a lavatory, drawers, a shelf, and a clothes case that opens wide by means of a tambourine door.

"This is not a project for reconversion. ENGINEERING has advanced beyond brick on brick and lintel on post structures of reconstruction days. The plywood airplane bomber is based on a system of complete stress transmission over the total outer shell.

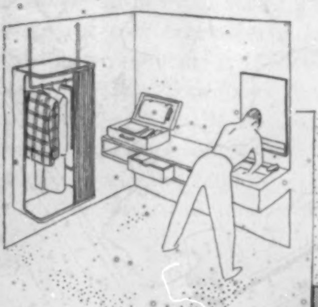
"During the war the engineer has solved the needs of the times. But why now must we reconvert: The building industry can well take time to employ the engineer as a man of advancement and the factory as a machine for producing advanced structural systems."


parking level
lobby level

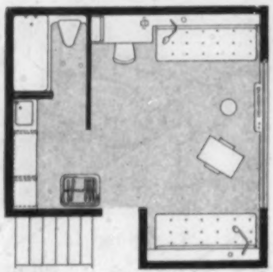
Circulation Section

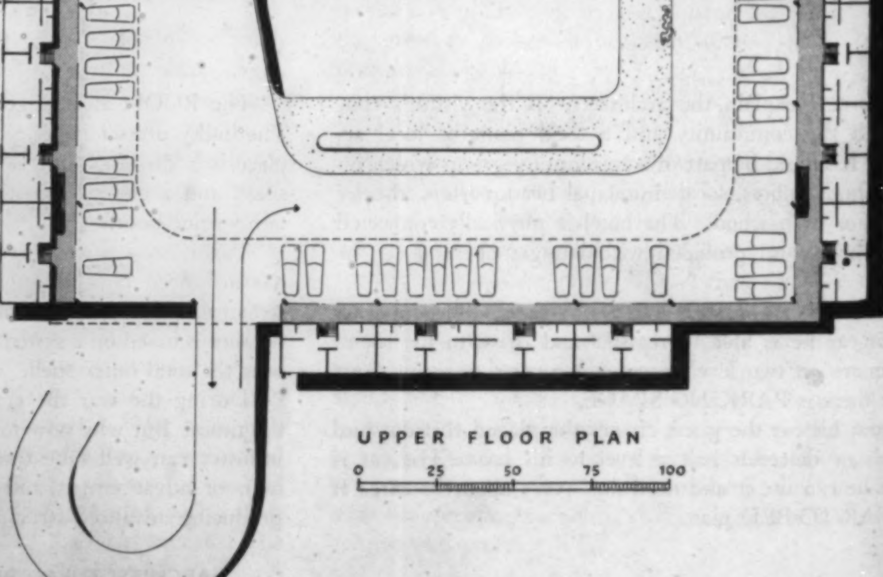


Above: view of living area
Below: view of dressing area

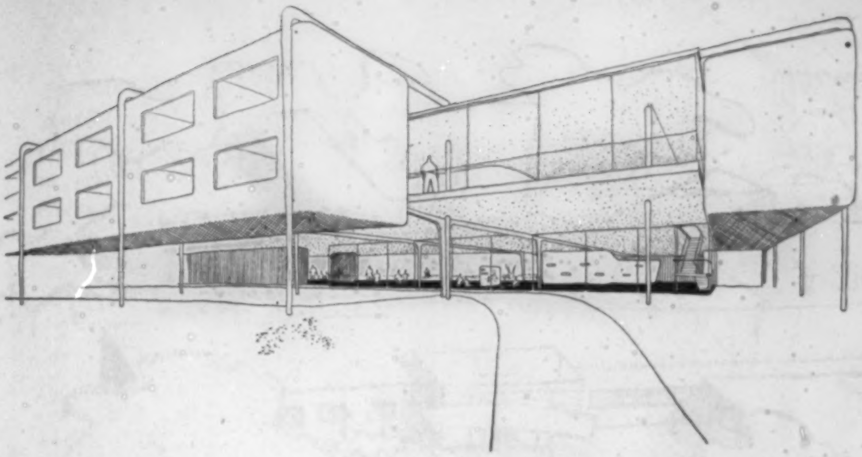


Room plan

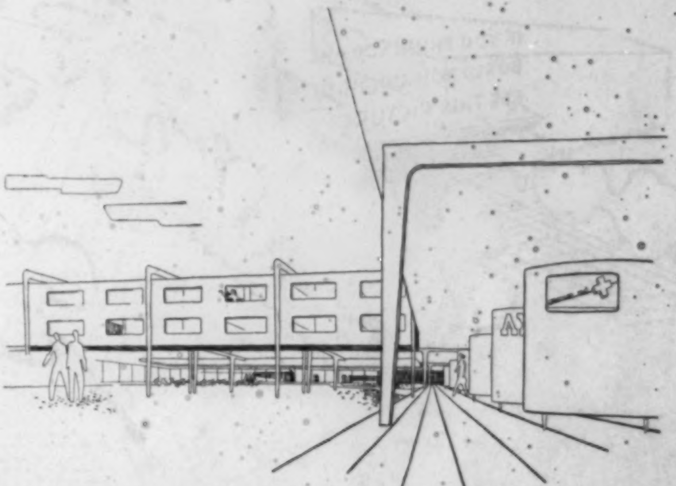



linen
0
25
50
75
100

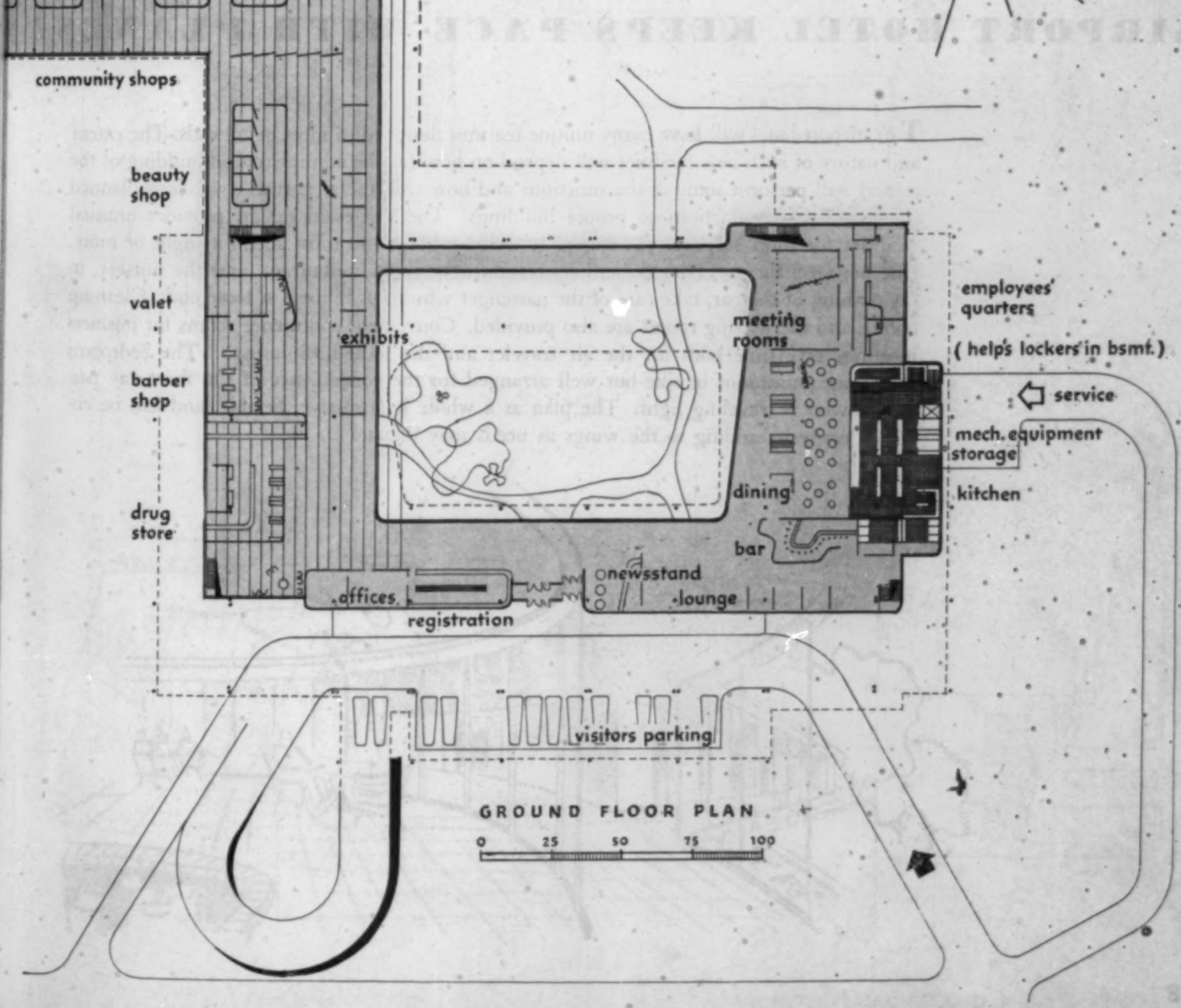
UPPER FLOOR PLAN



View of entrance

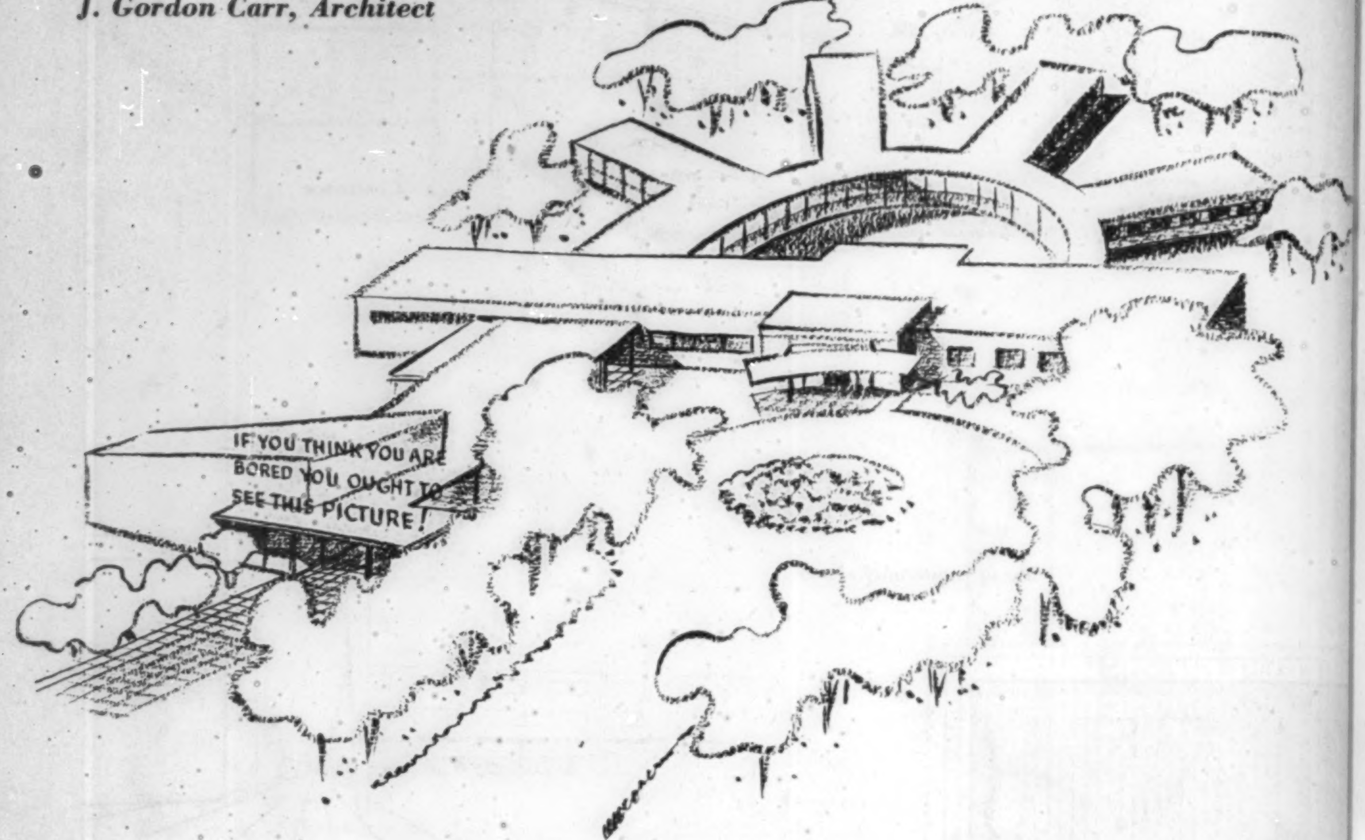


View of community center


community shops
beauty shop
valet
exhibits
barber shop
drug store
offices
registration
newsstand
lounge
meeting rooms
dining
bar
employees' quarters
(help's lockers in bsmt.)
service
mech. equipment
storage
kitchen
visitors parking
0
25
50
75
100

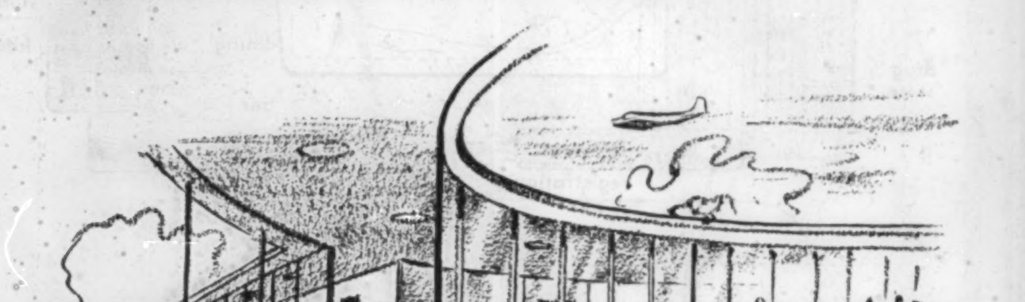
GROUND FLOOR PLAN

J. Gordon Carr, Architect

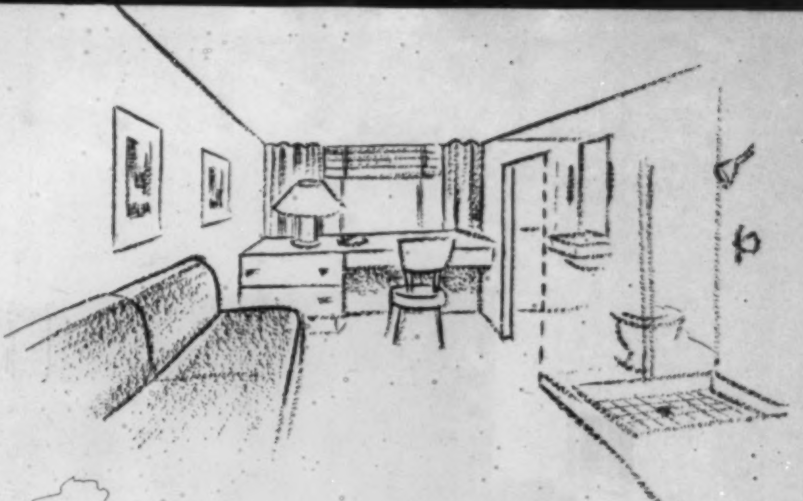

IF YOU THINK YOU ARE BORED YOU OUGHT TO SEE THIS PICTURE!

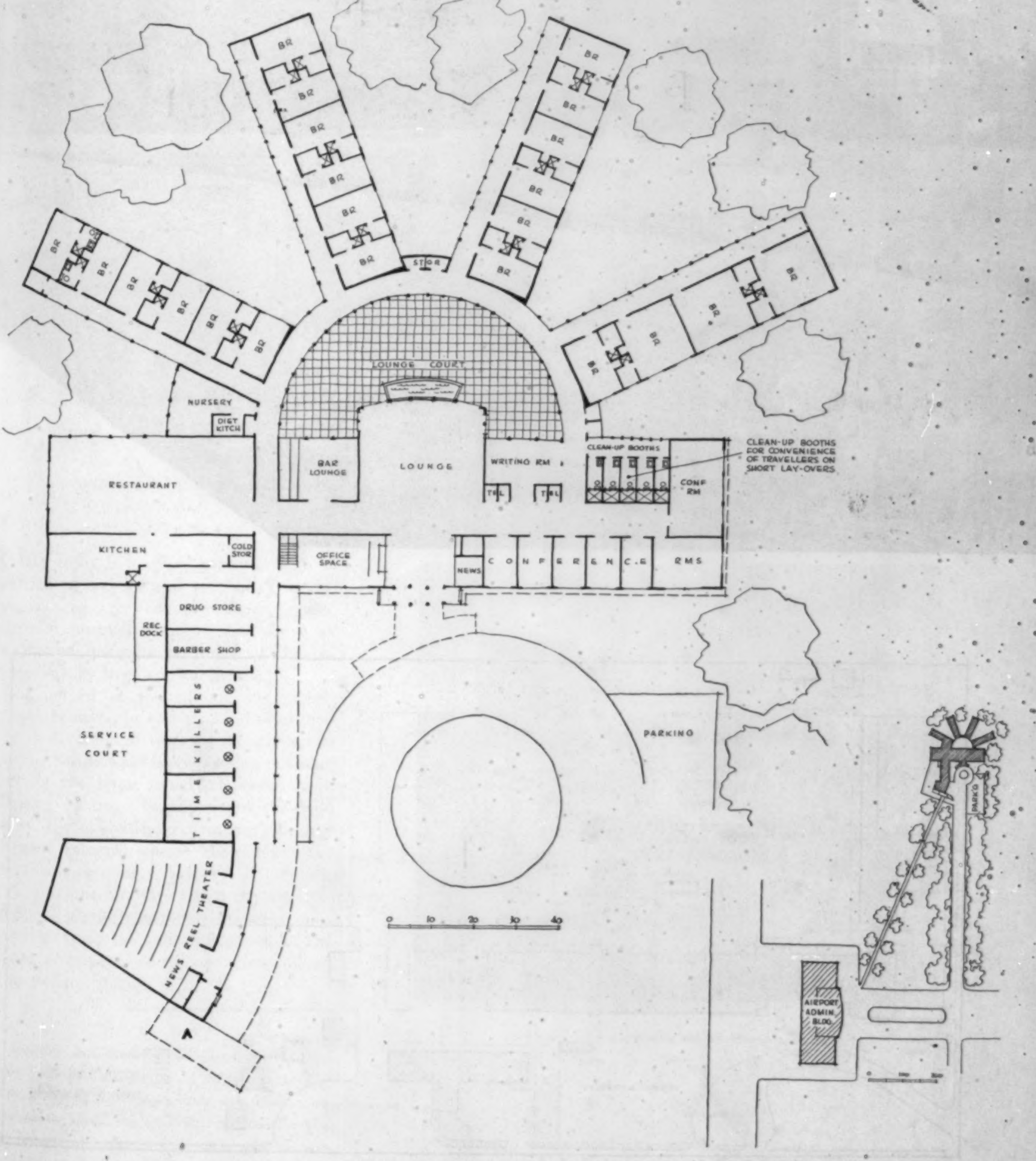
AIRPORT HOTEL KEEPS PACE WITH PLANES

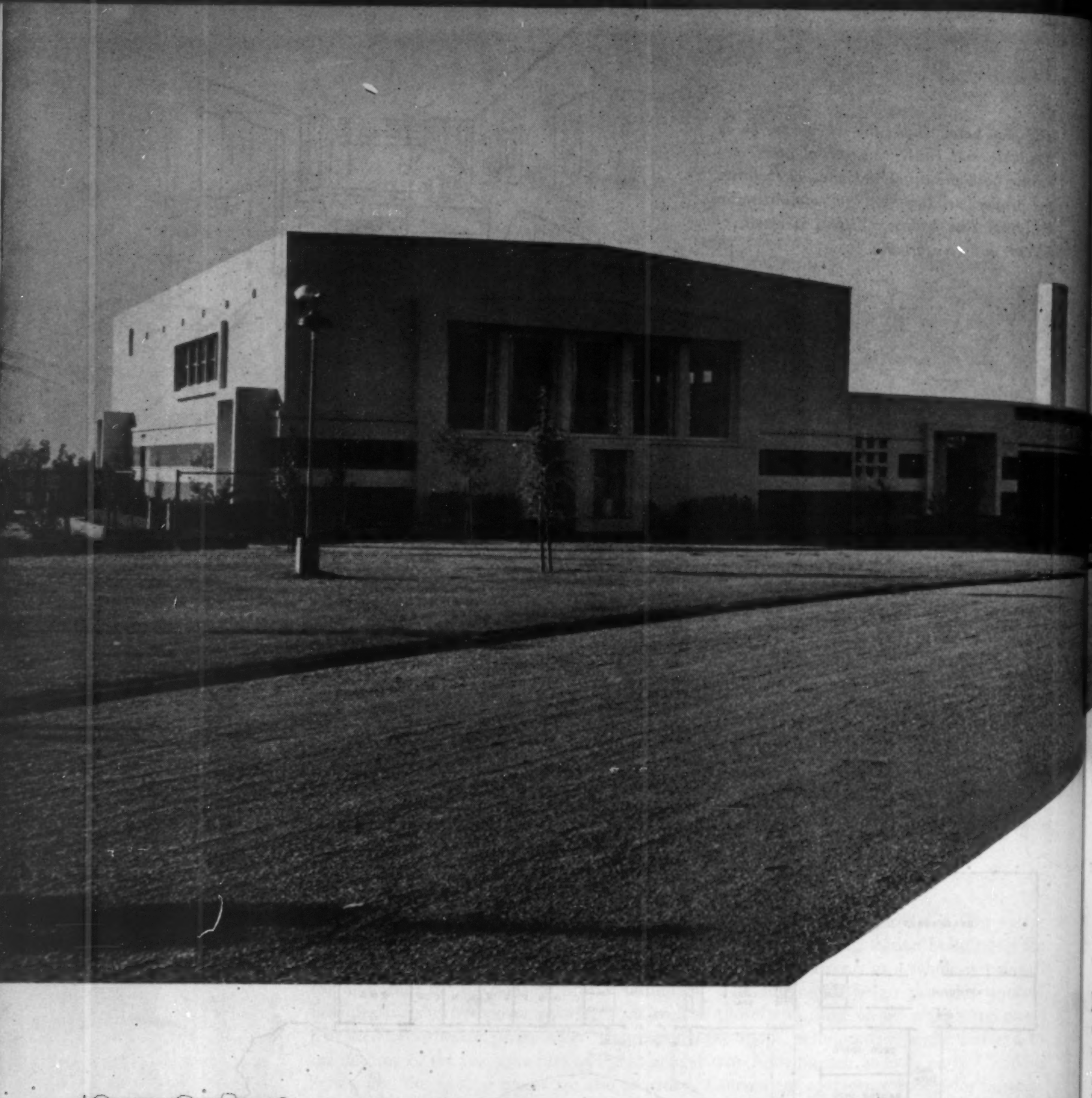
The airport hotel will have many unique features designed to meet new needs. The extent and nature of such new facilities will depend on how far the administration building of the airport will perform some of the functions and how well the airport as a whole is planned for allocation of functions to proper buildings. The suggested design provides unusual facilities for short stopover passengers as well as those who must spend a night or more. The newsreel theatre, "time-killer" concessions, the shops, restaurant, and the nursery, to say nothing of the bar, take care of the passenger who finds himself at loose ends. Clean-up booths and the writing rooms are also provided. Convenient conference rooms for business meetings save time both for the air traveler and the local businessman. The bedrooms shown are minimum in size but well arranged for the convenience of the short-stay passenger who is traveling light. The plan as a whole is attractive, flexible, and can be enlarged easily by adding to the wings as needs may dictate.

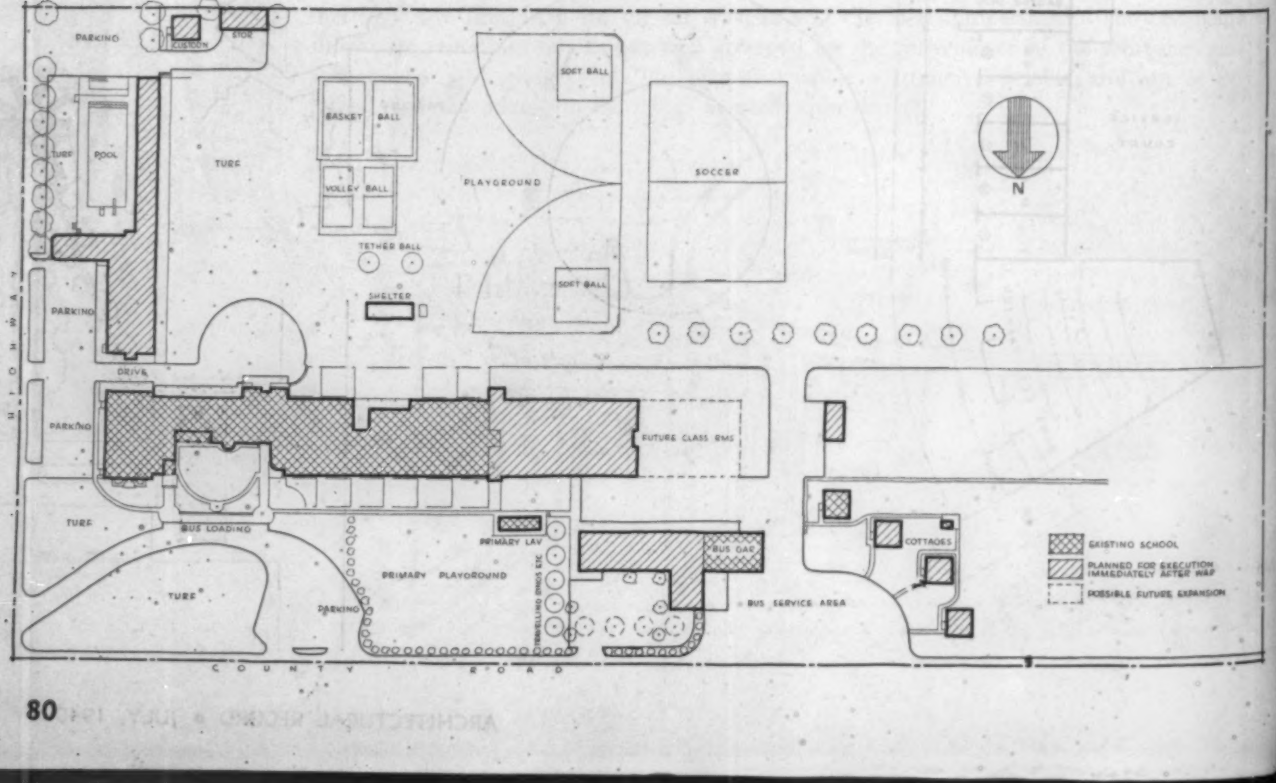


The plan below shows the scheme for an expandable and easily constructed hotel, providing both the usual and unusual facilities, in proper relation to the administration building. The bedroom, right, is small, efficient, and comfortable




BR
STOR
LOUNGE COURT
NURSERY
DIET KITCH
RESTAURANT
BAR LOUNGE
LOUNGE
WRITING RM
TEL
CLEAN-UP BOOTHS
CLEAN-UP BOOTHS FOR CONVENIENCE OF TRAVELLERS ON SHORT LAY-OVERS
CONF RM
KITCHEN
COLD STOR
OFFICE SPACE
NEWS
CONFERENCE RMS
DRUG STORE
REC DOCK
BARBER SHOP
SERVICE COURT
TIME KILLERS
NEWS REEL THEATER
PARKING
0
10
20
30
40
PARKG
AIRPORT ADMIN BLDG




PARKING
CUSTODN
STOR
TURF
POOL
TURF
BASKET BALL
VOLLEY BALL
PLAYGROUND
SOFT BALL
SOFT BALL
SOCCER
N
TETHER BALL
SHELTER
PARKING
DRIVE
PARKING
FUTURE CLASS RMS
TURF
BUS LOADING
PRIMARY LAV
PRIMARY PLAYGROUND
TRAVELLING RINGS ETC
TURF
PARKING
BUS GAR
BUS SERVICE AREA
COTTAGES
EXISTING SCHOOL
PLANNED FOR EXECUTION IMMEDIATELY AFTER WAR
POSSIBLE FUTURE EXPANSION
HIGHWAY
COUNTY ROAD

LA

RAREL
extende
one, w
protruc
the fa
trance

The
arousec
ance, ir
step th
tions f
clereste
Robles
arrived
parapet
:nool a
instead
is doub
guiding
on succ

In Arch
shown i
Lakeside
these p
right is

Roger Sturtevant photos

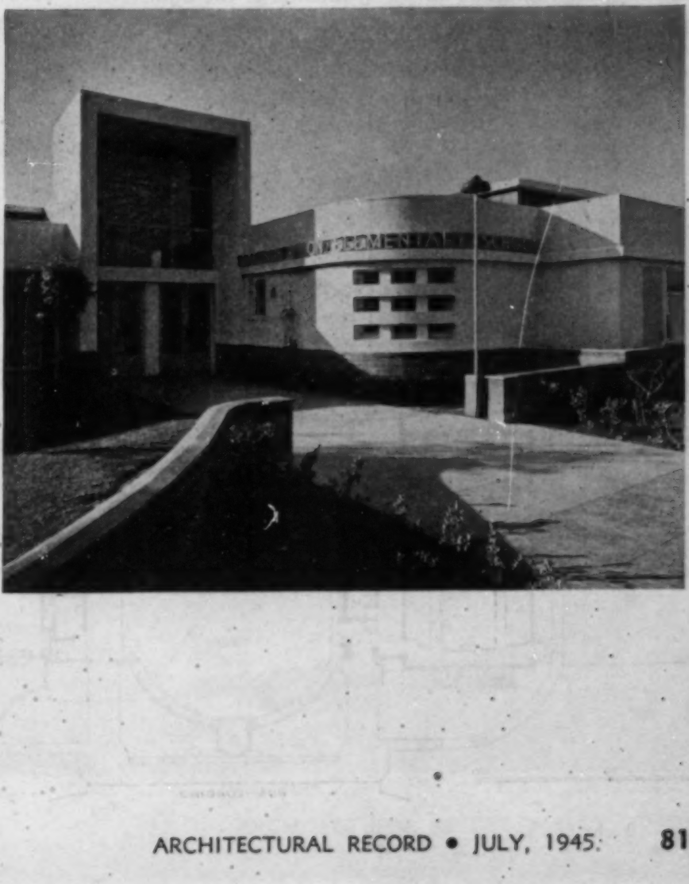
LARGE SCHOOL WITH UNUSUAL CLASSROOM SYSTEM

Lakeside Union Elementary School, California

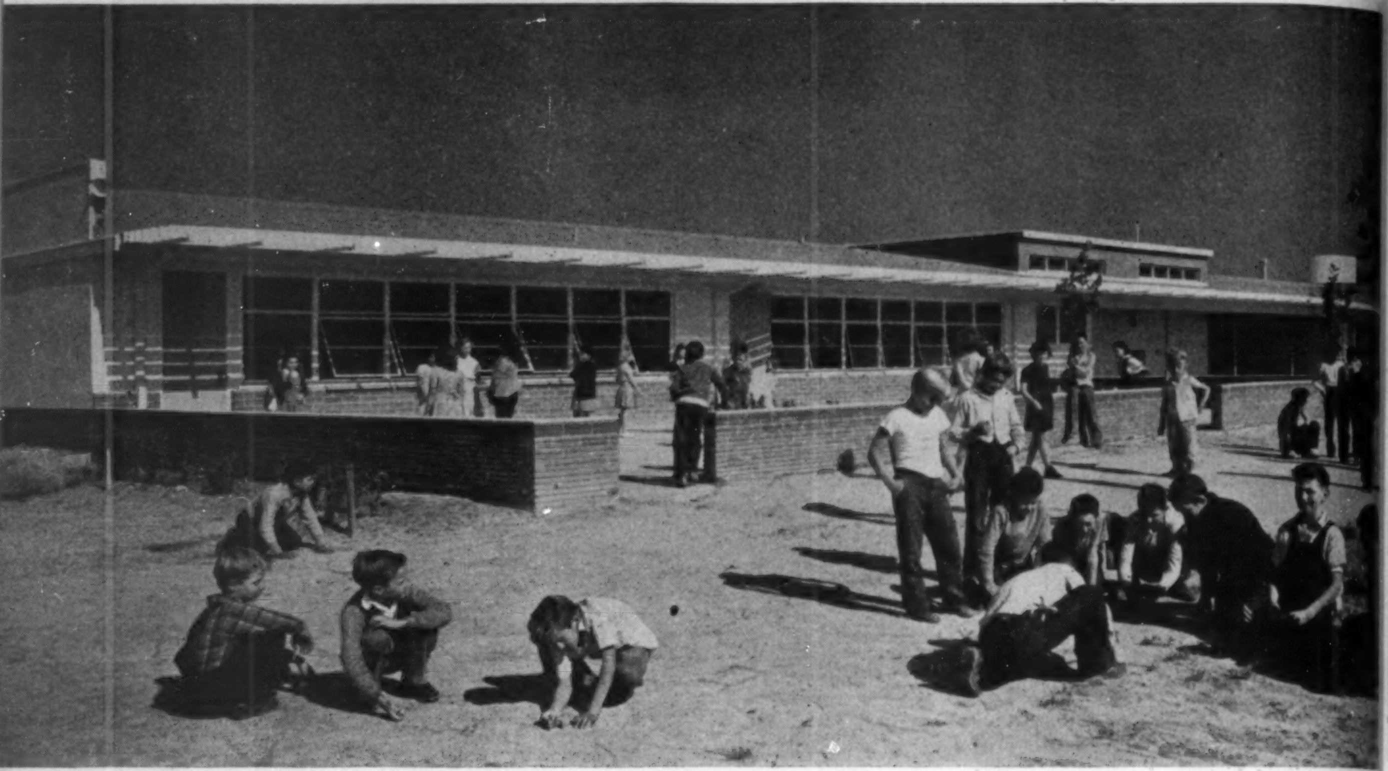
Frank Wynkoop and Associates, Architects and Engineers

Rarely today is a school executed with so extended an architectural vocabulary as this one, with its repeated color bands, grilles, protruded surrounds, niches, and above all the fanciful half-cylinder tower at the entrance with its large convex mosaic.

The interest of the editors was mainly aroused, however, by another kind of exuberance, in the realm of working ideas. Step by step this architect has been working out solutions for the large square classroom with clerestory lighting. In schools of the Paso Robles type (published last month) he had arrived at a unique scheme using an exterior parapet as a boosting reflector. The Lakeside school adds the innovation that the corridor, instead of having classrooms one side only, is double-loaded. A full explanation of the guiding principles and the execution follows on succeeding pages.

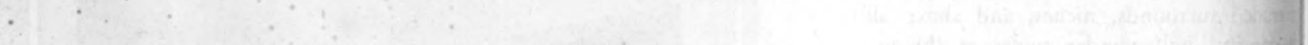


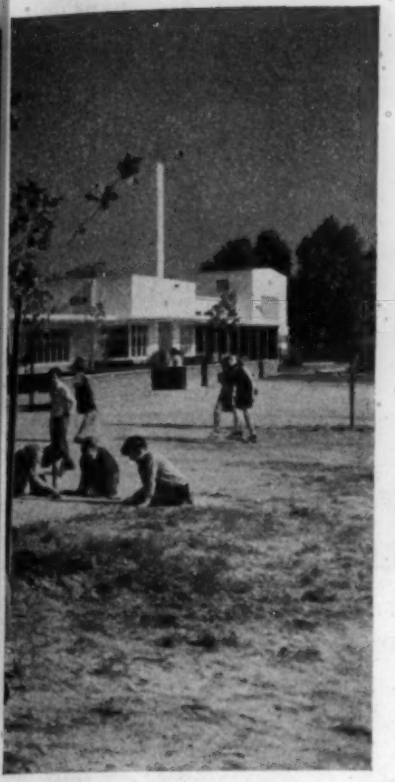
In Architectural Record for June plans were shown in detail of proposed additions to the Lakeside School for community use. Photos on these pages show the existing plant. To the right is seen the entrance half-tower with mosaic

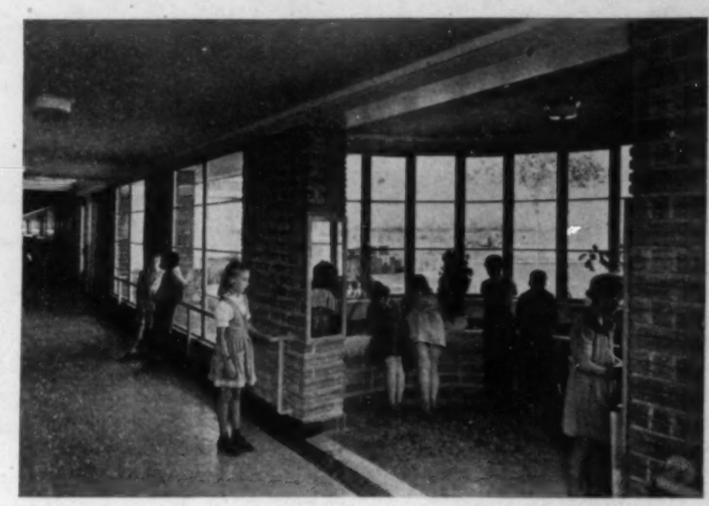


ONE of the fine school innovations in the mild climate of California has been the use of the outdoor classroom as auxiliary space for education. In this instance there is no shading by other classroom wings, and the full effectiveness of the scheme awaits the growth of shade-giving trees as shown in plan. A wide louvered sunbreak effectively protects the classroom interiors on the south side of the building against the direct rays of the sun.

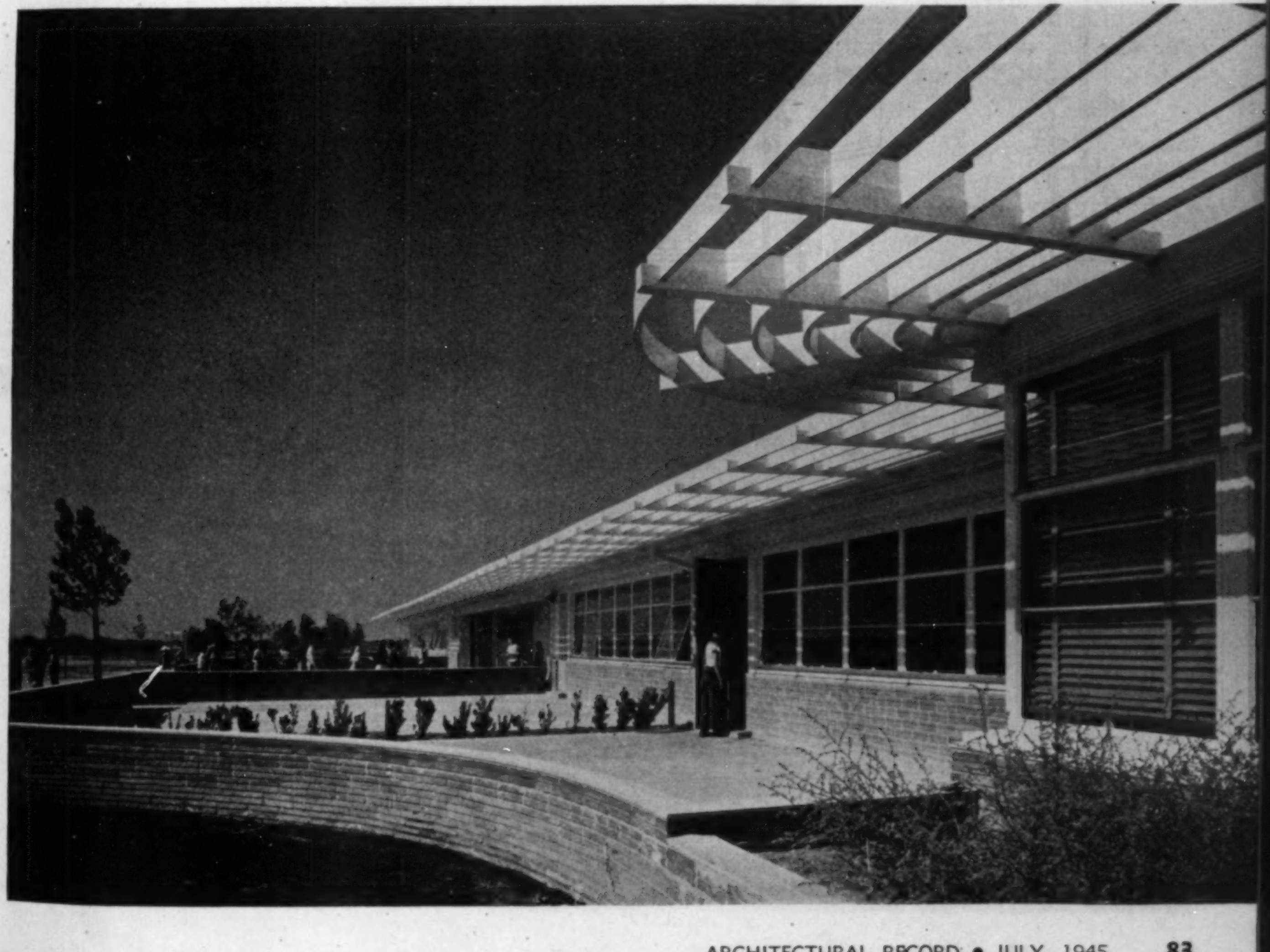
The view above shows the classroom wing as seen from the southwest corner (the upper righthand corner of the plan as drawn). Across-page is seen the same classroom wing from the direction of the south entrance

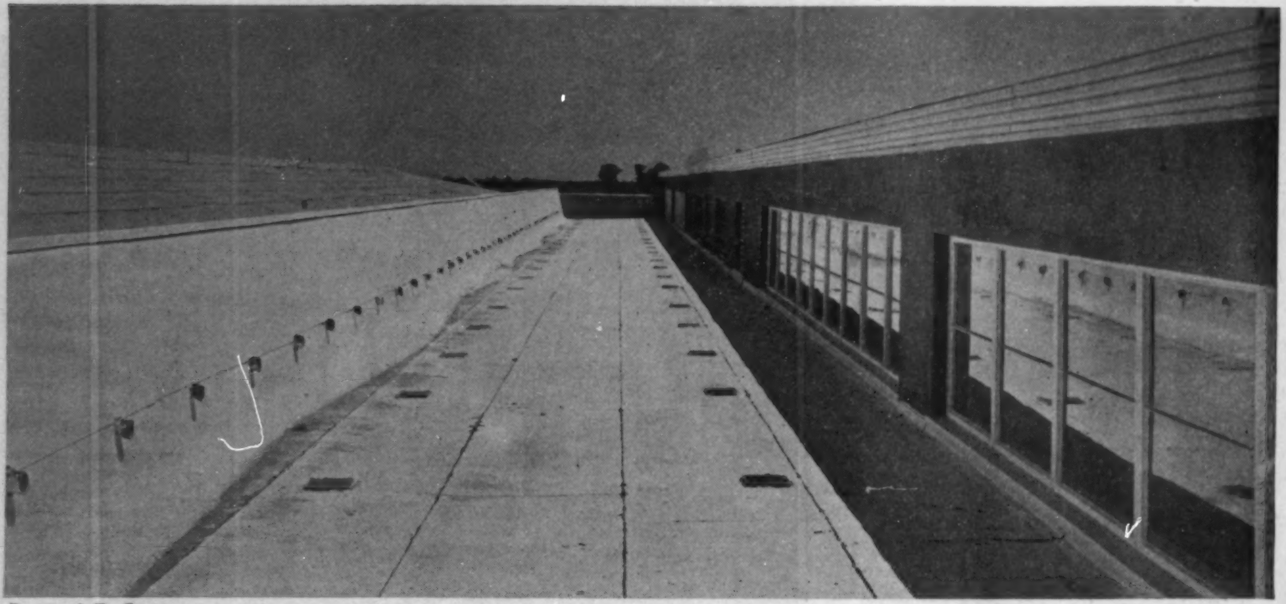

PARKING
PROPOSED EXTENSION
SERVICE DRIVEWAY
PARKING
DR
STAGE
P
DR
CLERESTORY WDWS ABOVE
CAFETERIA
CLERESTORY WDWS ABOVE
KITCH
TEACH RM
STOR
SUPT
GEN OFF
PRINC
CLASS ROOMS
O
ST
B
CLASS ROOMS
AUDITORIUM
W
M
CLINIC
TURF
CLASS ROOMS
CLASS ROOM PATIO
0
50
100
BUS LOADING





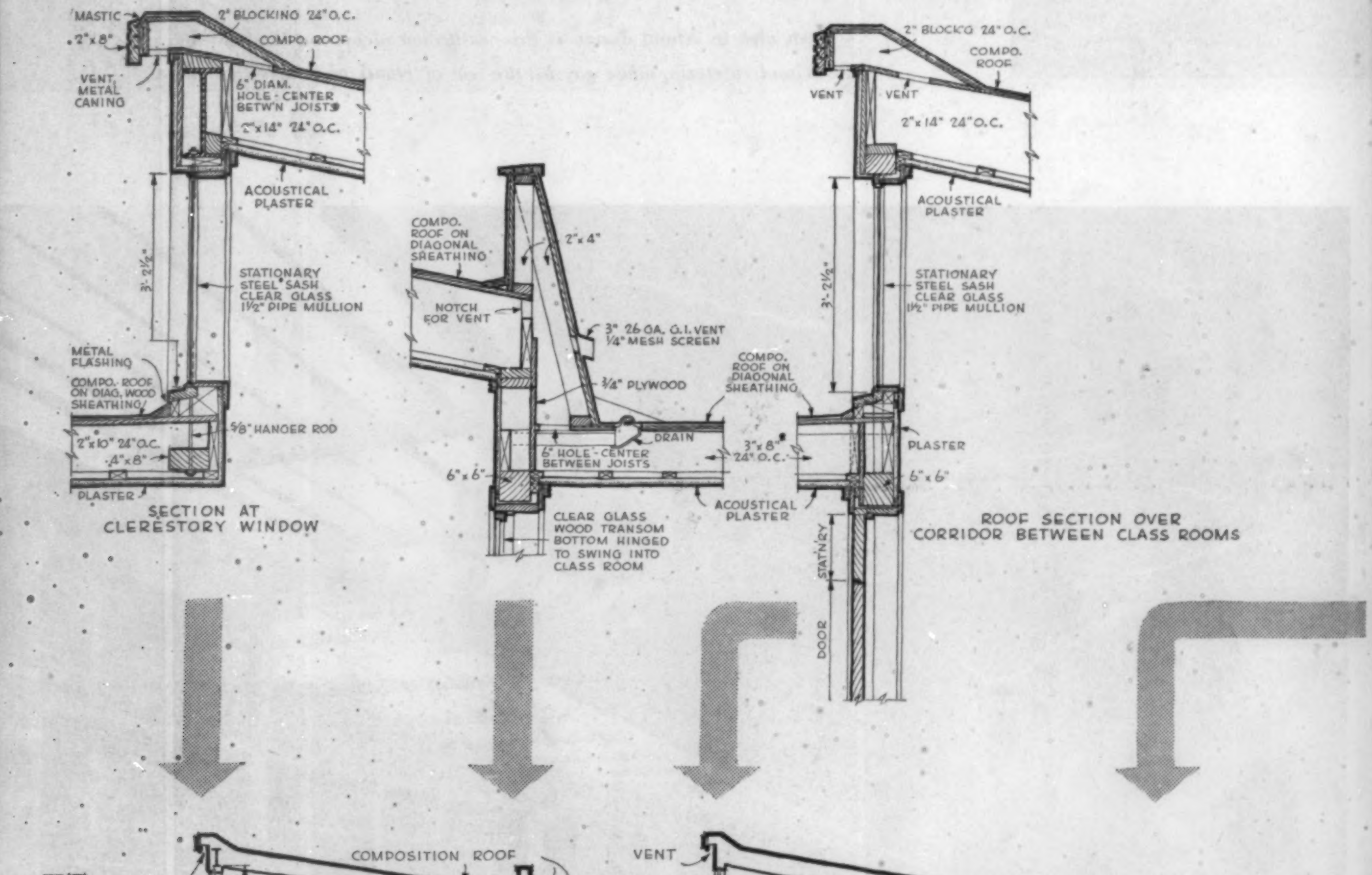
A fresh idea in school design is this washroom alcove on the way to the school cafeteria, made gay by the use of plants and fully lighted



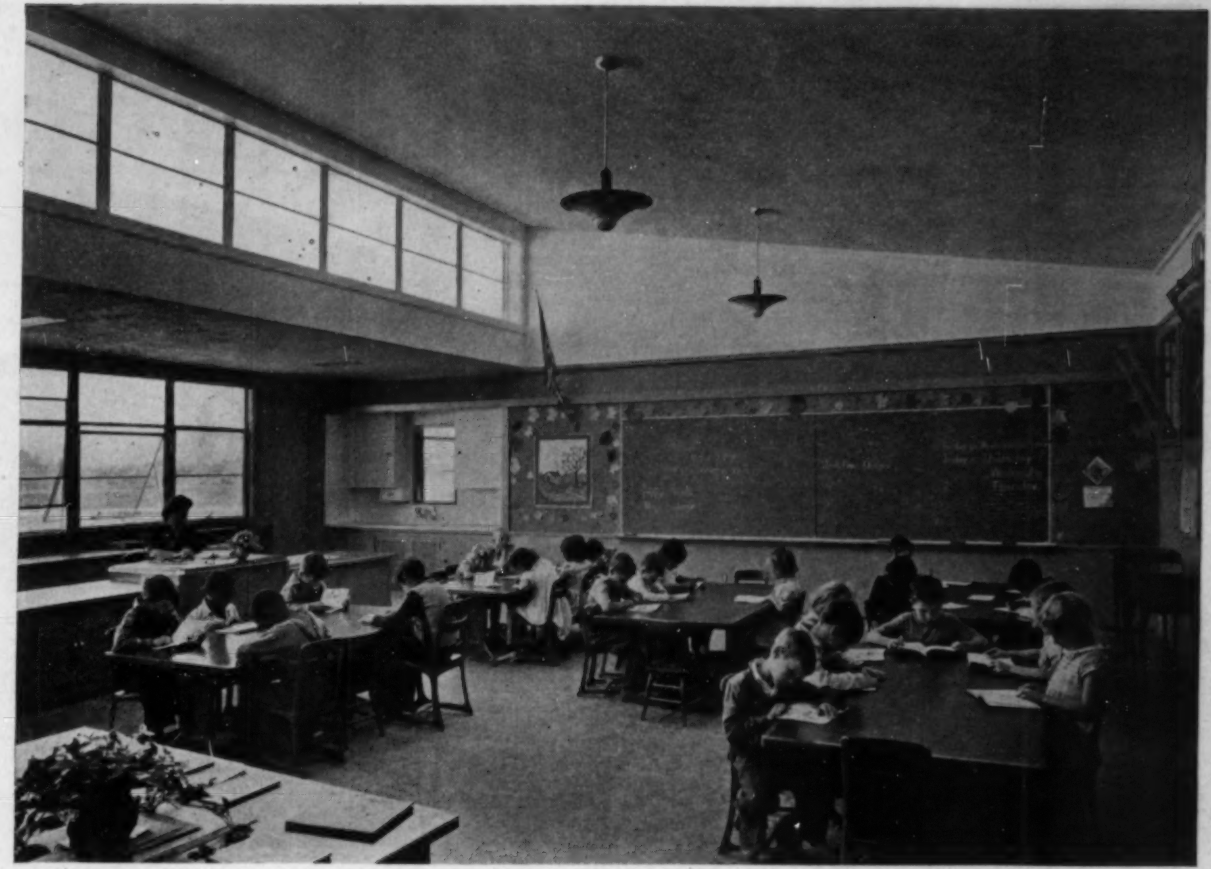


Raymond T. Geers

Above, the recessed roof over the central corridor, with clerestory windows of one classroom series to the right, and the powerfully reflecting parapet left

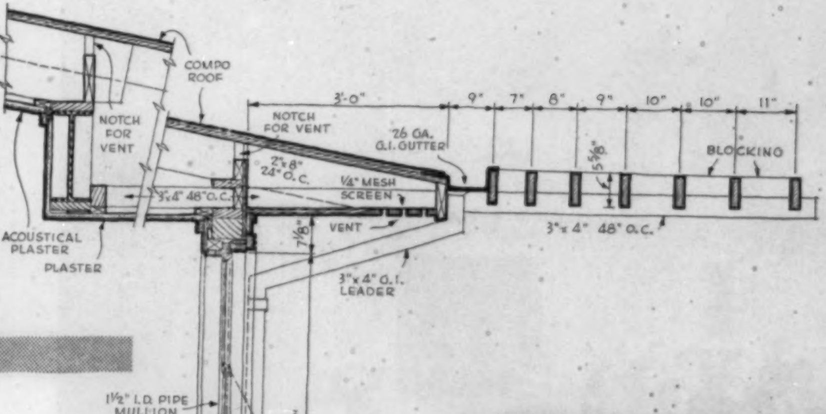

MASTIC
2"x 8"
2" BLOCKING 24" O.C.
COMPO. ROOF
VENT, METAL CANING
6" DIAM. HOLE - CENTER BETW'N JOISTS
2"x 14" 24" O.C.
ACOUSTICAL PLASTER
3'-2½"
STATIONARY STEEL SASH CLEAR GLASS 1½" PIPE MULLION
METAL FLASHING
COMPO. ROOF ON DIAG. WOOD SHEATHING
5/8" HANGER ROD
2"x10" 24" O.C.
4"x 8"
PLASTER
SECTION AT CLERESTORY WINDOW
COMPO. ROOF ON DIAGONAL SHEATHING
2"x 4"
NOTCH FOR VENT
3" 26 GA. G.I. VENT ¼" MESH SCREEN
¾" PLYWOOD
DRAIN
6" HOLE - CENTER BETWEEN JOISTS
6"x 6"
CLEAR GLASS WOOD TRANSOM BOTTOM HINGED TO SWING INTO CLASS ROOM
COMPO. ROOF ON DIAGONAL SHEATHING
3"x 8" 24" O.C.
ACOUSTICAL PLASTER
2" BLOCK'G 24" O.C.
COMPO. ROOF
VENT
VENT
2"x 14" 24" O.C.
ACOUSTICAL PLASTER
3'-2½"
STATIONARY STEEL SASH CLEAR GLASS 1½" PIPE MULLION
PLASTER
6"x 6"
STAT'N'RY
DOOR
ROOF SECTION OVER CORRIDOR BETWEEN CLASS ROOMS
COMPOSITION ROOF
VENT
VENT
ACOUSTICAL PLASTER
STATIONARY STEEL SASH
LATTICE
PLASTER
12'-6"
13'-3⅞"
8'-7¼"
STEEL LOCKERS
ASPHALT TILE
PIPE TUNNEL
0 5 10 15
TYPICAL CLASS ROOM SECTION

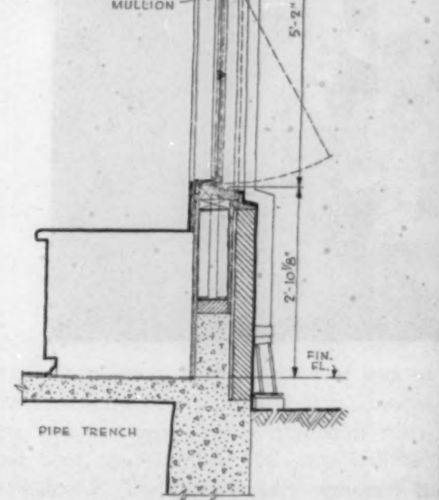
Vertical cross-section with accompanying structural details. Steel beams carry clear spans. The one seen at left carries the clerestory by pipes in suspension



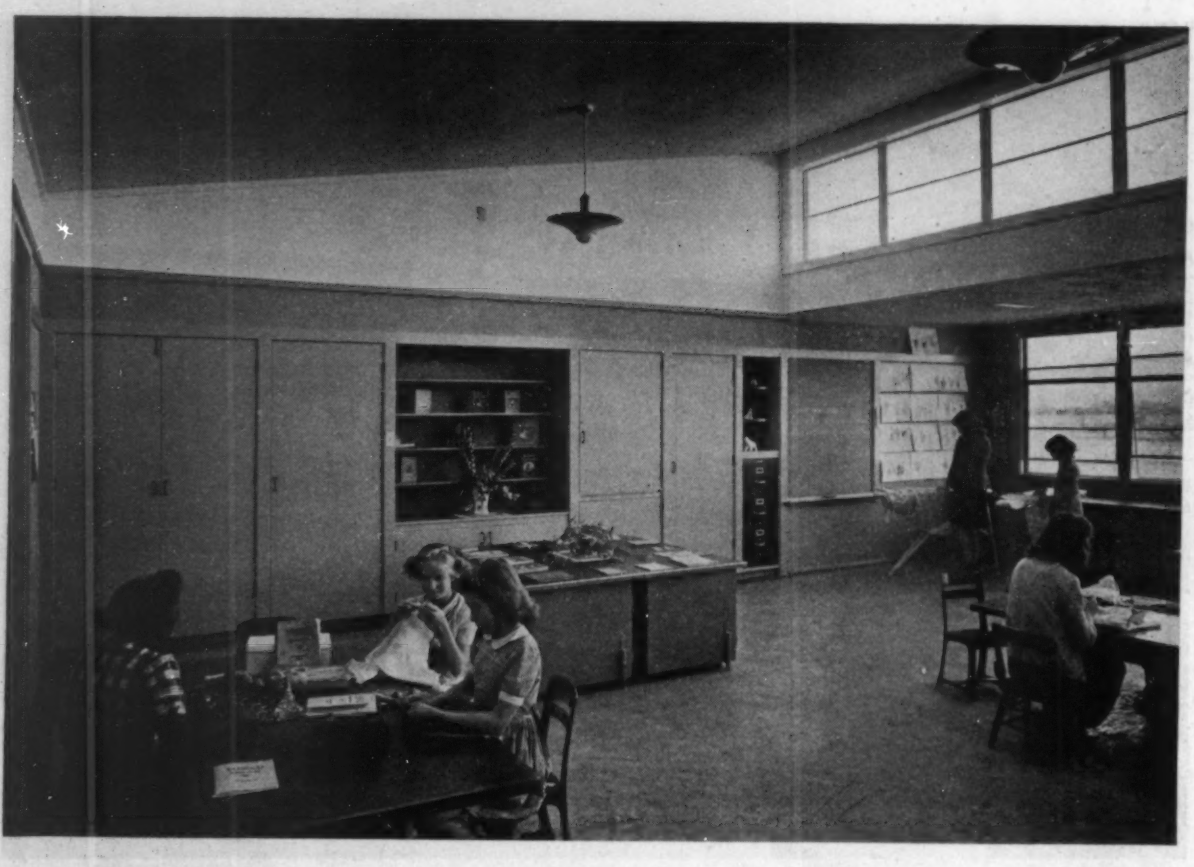
Roger Sturtevant photos

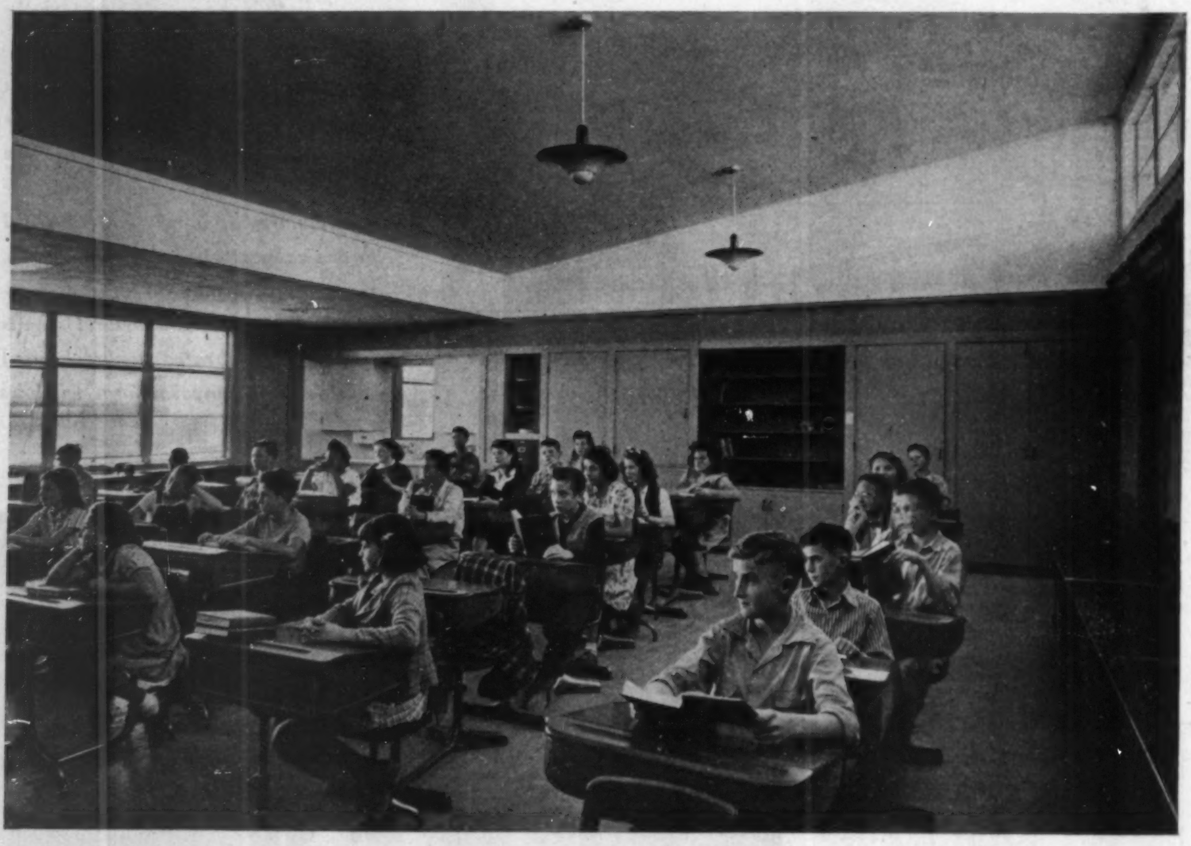
Photographs and cross-sections on these two pages reveal the heart of the classroom lighting system of the school. The photo above shows the even quality of north light obtained through clerestories; the photo below, the unusual brightness of the corridors. Note, among structural details at left, the louvered sunbreak used outside the sunny southern windows


COMPO ROOF
NOTCH FOR VENT
NOTCH FOR VENT
3'-0"
9"
7"
8"
9"
10"
10"
11"
26 GA. G.I. GUTTER
2"x8" 24" O.C.
3"x4" 48" O.C.
1/4" MESH SCREEN
5 5/8"
BLOCKING
VENT
3"x 4" 48" O.C.
ACOUSTICAL PLASTER
PLASTER
7 1/8"
3"x4" G.I. LEADER
1½" I.D. PIPE MULLION
5'-2"
2'-10 1/8"
FIN. FL.
PIPE TRENCH



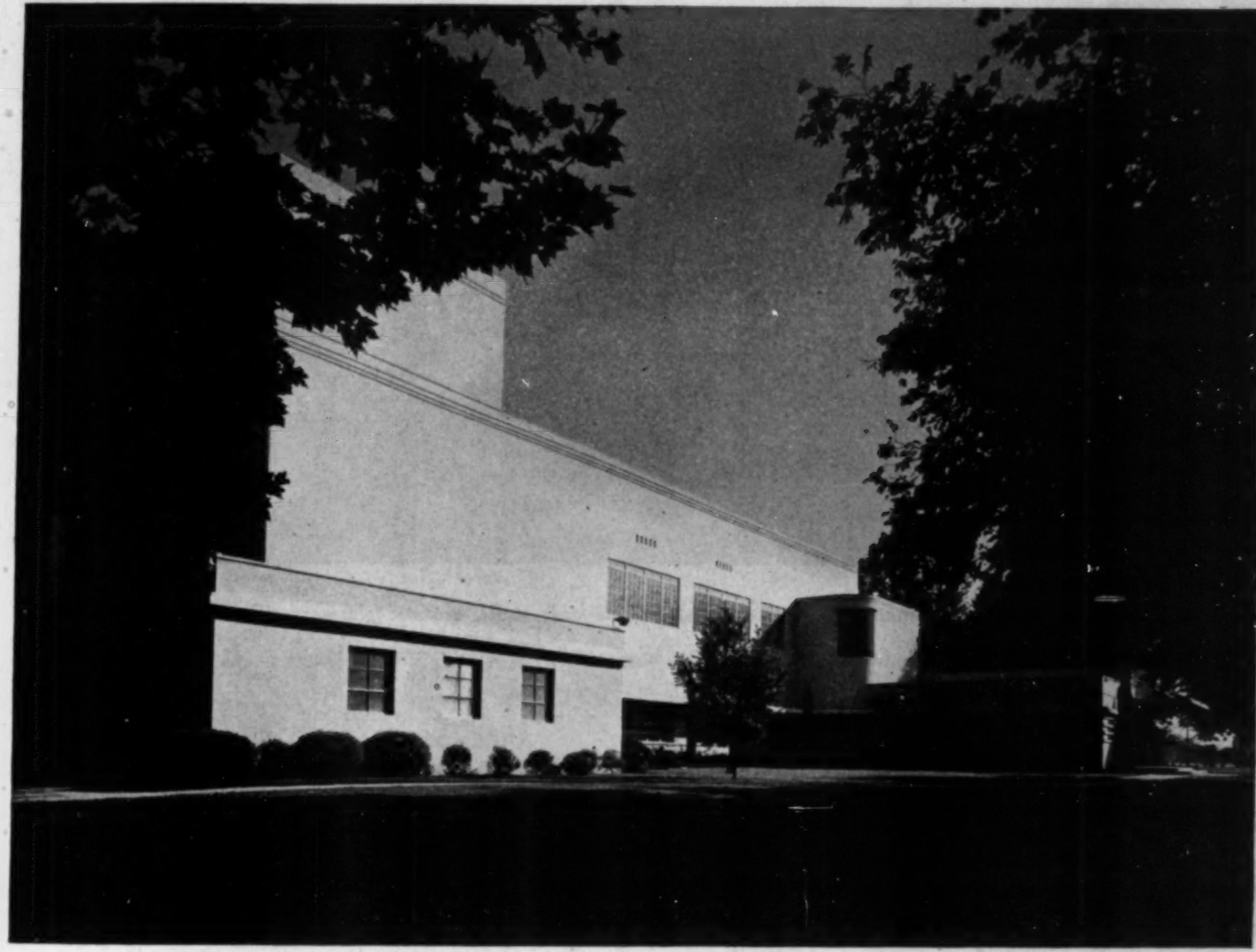
WALL SECTION
SOUTH CLASS ROOMS





The classroom seen above faces north, that below faces south, from the central corridor. Both have the same general clerestory lighting, but differently arranged. The southern window, below, is protected by an exterior sunbreak

COMMUNITY AUDITORIUM AS NUCLEUS OF SCHOOL

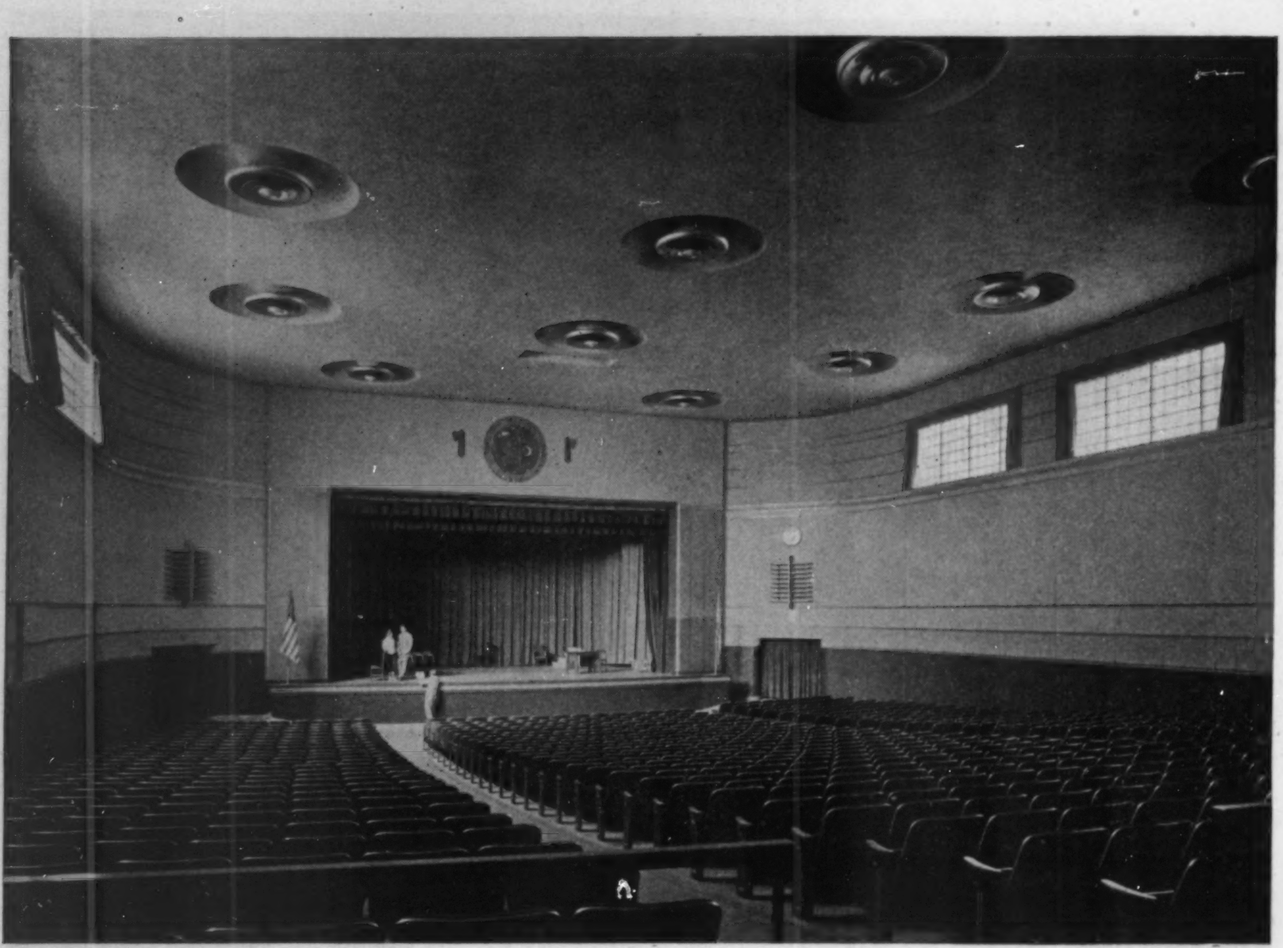


Roger Sturtevant photos

Delano Joint Union High School, California

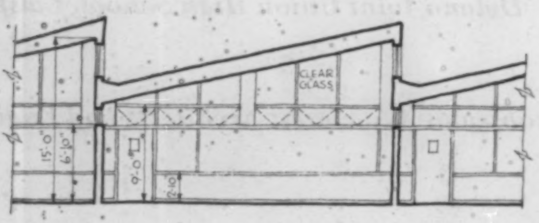
Frank Wynkoop and Associates, Architects and Engineers

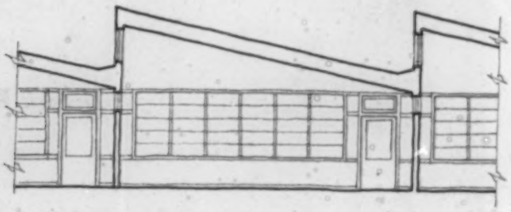
In the current enthusiasm for community planning, the process of rebuilding this high school was turned around so that the community unit came first, combining an auditorium and cafeteria. The auditorium seats 900 on the ground floor, and another 400 seats will be added on a future balcony. The stage is fully equipped, has a counterbalance system and an overhead grid, is served by a property room and no fewer than six dressing rooms. The cafeteria, seating 400, runs full-length of the auditorium on one side. A combined heating plant will be used for the whole unit as well as for the academic wing to be added soon. In the auditorium, down-draft warm air is diffused through ceiling anemostats equipped at the same time for indirect lighting; mushroom ventilators under auditorium chairs provide air recirculation. Construction is of reinforced concrete and steel. Exterior color is beige.

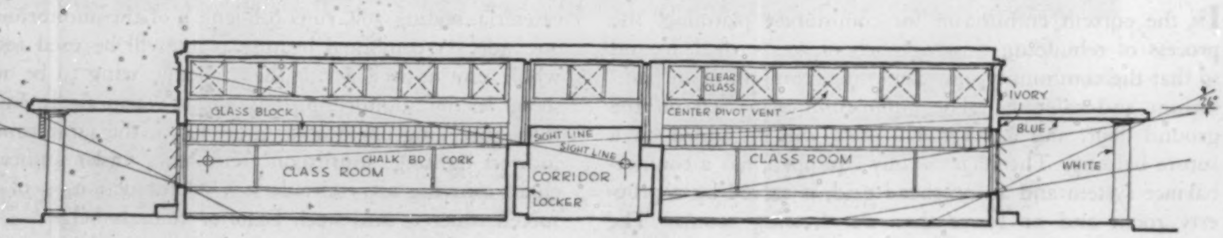


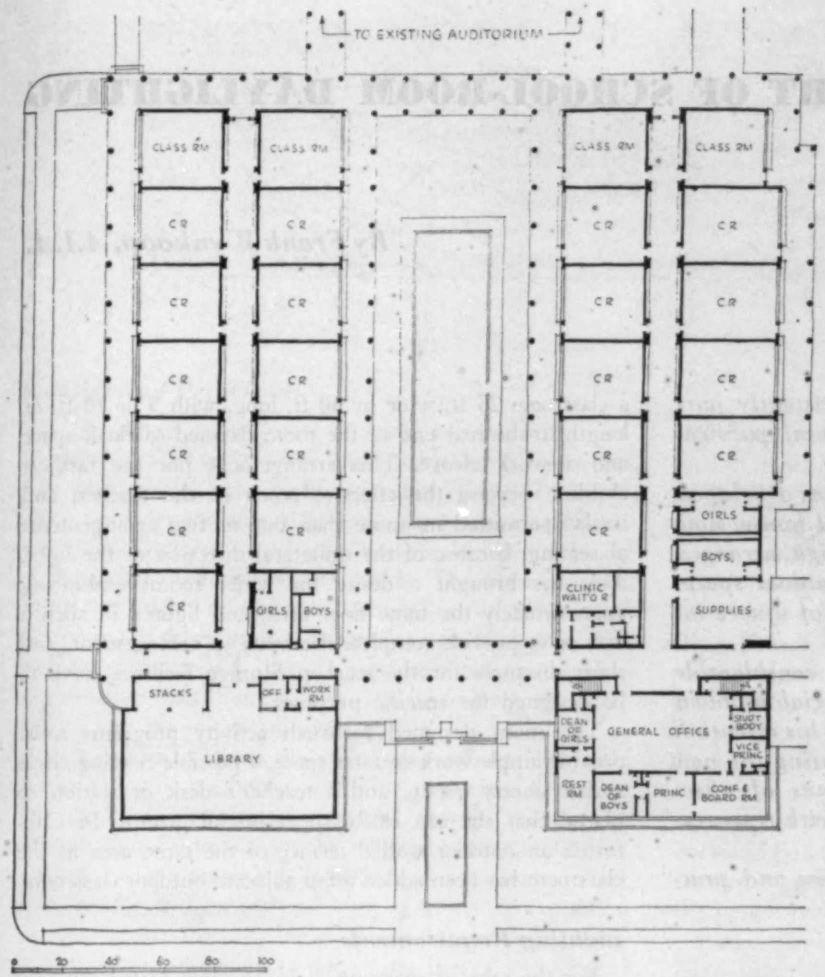
Anemostats diffuse warm air and contain lights. Dado is hard wallboard; walls, acoustic plaster; ceiling, sand-finished plaster

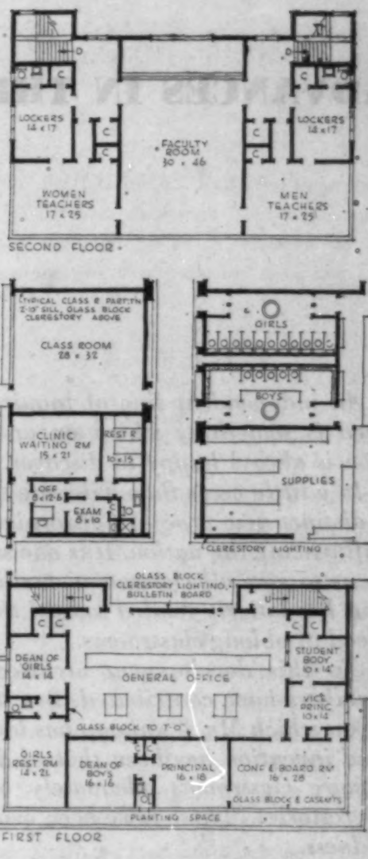
A VERY UNUSUAL school building system is indicated in the plans and sections on these two pages, representing proposed additions to the Delano school. The reasoning behind the use of transverse sawteeth, running across the corridor as well as the classrooms, is given by the architect himself in an article on page 90 on the art of daylighting. Apart from this reasoning, there is considerable interest in the quiet and conservatively charming appearance that can be given to such radical expedients, as indicated by the view across-page of an existing part of the proposed all-surrounding colonnade. It has an important function in subordinating the light from side windows, which serve for ventilation and view.


CLEAR GLASS
15'0"
6'10"
9'0"
2'10"




26°
18°
GLASS BLOCK
CHALK BD
CORK
CLASS ROOM
SIGHT LINE
SIGHT LINE
CORRIDOR
LOCKER
CLEAR GLASS
CENTER PIVOT VENT
CLASS ROOM
IVORY
BLUE
WHITE
26°


TO EXISTING AUDITORIUM
CLASS RM
CR
GIRLS
BOYS
CLINIC WAIT'G R
SUPPLIES
STACKS
OFF
WORK RM
LIBRARY
DEAN OF GIRLS
GENERAL OFFICE
STUD'T BODY
VICE PRINC
REST RM
DEAN OF BOYS
PRINC
CONF'E BOARD RM
0 20 40 60 80 100


LOCKERS 14 x 17
FACULTY ROOM 30 x 46
WOMEN TEACHERS 17 x 25
MEN TEACHERS 17 x 25
SECOND FLOOR
TYPICAL CLASS R PART'N 2'10" SILL, GLASS BLOCK CLERESTORY ABOVE
CLASS ROOM 28 x 32
CLINIC WAITING RM 15 x 21
REST R
EXAM
OFF
GIRLS
BOYS
SUPPLIES
CLERESTORY LIGHTING
GLASS BLOCK CLERESTORY LIGHTING, BULLETIN BOARD
DEAN OF GIRLS 14 x 14
GENERAL OFFICE
STUDENT BODY 10 x 14
VICE PRINC 10 x 12
GLASS BLOCK TO 7'-0"
GIRLS REST RM 14 x 21
DEAN OF BOYS 16 x 16
PRINCIPAL 16 x 18
CONF'E BOARD RM 16 x 28
GLASS BLOCK & CASEM'TS
PLANTING SPACE
FIRST FLOOR

Above, administrative unit enlarged

Proposed academic building, shown in plan above, forms a court flanking the existing auditorium, to be balanced by another court on the other side. Building exterior is beige, columns are white, soffit is blue

ADVANCES IN THE ART OF SCHOOL-ROOM DAYLIGHTING

By Frank Wynkoop, A.I.A.

An independent line of inquiry consistently pursued is something which an architectural publication is always happy to discover.

In a little more than a decade there has developed a distinct new type of California school house, now influencing the nation. It is one story high, arranged so as to give all classrooms auxiliary outdoor space, and has latterly tended toward the use of square instead of oblong classrooms.

To this development architects in considerable numbers have contributed. But the special problem upon which Mr. Wynkoop has lavished his attention and invention has been that of daylighting the new square classrooms adequately by means of offset clerestories. These have been evolved with resourcefulness.

Herein he states his daylighting ideas and practices.—Ed.

AN architect acquainted with technical papers on natural illumination cannot fail to be impressed with the backwardness in actual practice, as expressed in fenestration and planning. Many accepted rules dictating the depth of schoolrooms in relation to height and window area result at best in undesirable extremes of light intensity and brightness in the interior.

"Why, with an abundance of light outdoors, do we go indoors and turn on lights?"

The modern one-story school, free of such restrictions, affords great latitude in the experimental daylighting of classrooms. No school design today should, during the school day, require supplementary artificial illumination except under extreme circumstances such as heavy storms.

Laboratory tests have less value than empirical findings. The architect and his associated engineers are perhaps the only people aware of all the actual problems.

The approach involves questions of planning (as required by school boards for educational purposes), of daylighting principles, and of structural devices.

Planning Requirements

We shall concentrate our discussion on the elementary school with a so-called activity program. Educators describe this program as one which permits children "to engage in worthwhile, satisfying experiences." In purely physical terms this amounts to providing a great deal of extra usable floor space.

The rooms of the past, averaging 22 ft. by 32 ft., have proved inadequate for the diversified activities. Using conventional window lighting and increasing the length of the classroom brought about the general use in California of a classroom 23 ft. wide by 40 ft. long, with 9 or 10 ft. of length to the rear end of the room devoted to cloak space and a work alcove. This arrangement put the farthest children beyond the effective reach of the teacher, and it also permitted no more than one or two arrangements of seating, because of the unilateral direction of the light. This has brought a desire for wider rooms embracing approximately the same floor area, and lighted in such a way as to provide complete flexibility in arrangement, and short distances for the teacher. Storage facilities have to be designed for specific purposes.

The room designed for such activity programs must provide ample work counter space, a possible reading circle and a library group, and a teacher's desk or station so placed that she can easily supervise all groups. In California an outdoor walled terrace of the same area as the classroom has been added as an adjacent outdoor classroom.

Lighting Requirements

For the sake of economy, it is desirable to use daylight alone throughout school hours.

Requirements are:

Sufficient intensity of light, under any and all outdoor conditions from 9 a.m. to 3 p.m., for close seeing tasks of young pupils whose eyes are still in the formative stage.

Correct light without recourse to manual control. Experience indicates that such controls are neglected and misused.

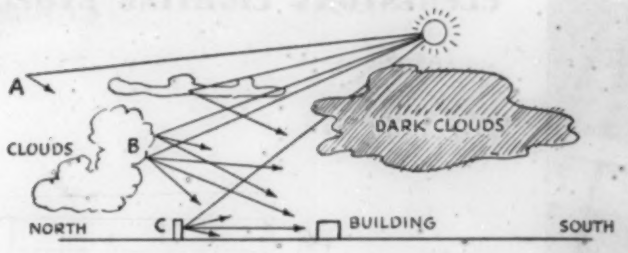
Adequate artificial illumination to supplement daylighting under extremely unfavorable outdoor daylight conditions, and to permit night-time use of the classroom, as well as janitor service in the evening.

Light should have a slightly directional effect—in other words it should cast some shadow—and interior intensity or volume should be so high that there will not be uncomfortable sense of glare when occupants face windows (glare is not an absolute quality but an effect of extreme contrast).

Light should be of equal intensity throughout the room. Light should have color characteristics that are soothing and not depressing.

Intensity and diffusion of light should be so level that any furniture arrangement is possible without eye discomfort.

Fenestration should allow a view of outdoor landscape for psychological purposes as well as for eye exercise.



ASPECTS OF BRIGHTNESS. Reflected light from clouds (B) is brighter than that from a clear sky (A). A white wall (C), even if it stands in the shade, is a more powerful reflector than sky (A)

Daylighting Principles

Light should approximate as nearly as possible the conditions found in nature. One highly desirable attribute that has been almost universally neglected is easy transition from outdoors to indoors and vice versa. An extreme example of discomfort is that of coming suddenly into bright sunlight from a motion picture theater. This often produces headaches and is undoubtedly harmful to the eyes. School corridors are transitional elements between classrooms and the out-of-doors and should therefore have even higher illumination than the classrooms instead of being the darkest part of the entire building.

It is logical to expect the eye to operate most efficiently under ratios of brightness met most frequently in nature. In terms of intensity, the general average of daylight illumination outdoors is in the neighborhood of 4000 foot candles, with a maximum of 6000 and a minimum of 60 foot candles and an extreme high of 10,000 foot candles. In this context, intensity means the amount of light falling from a vertical direction on one square foot of a horizontal plane.

Brightness is something else. It means the amount of light that strikes the eye from a unit area in any direction, no matter whether the source is the sun or the sky or some object reflecting light. In nature the greatest ratio between maximum and minimum brightness in a segment of the horizon 60 degrees wide seldom exceeds 36:1 and the average is only 13:1. A hazy sky is several times brighter than a clear one and has the same white color as the sun, while the light from a clear sky is very poor in yellow and red rays, and calls for correction by the addition of reflected sunlight.

Another characteristic of the eye is that visual acuity is at its best when the central area under observation is brighter than the surroundings by about 2:1. Vision suffers when this contrast is more than 10:1. White paper is assumed to be the object under observation.

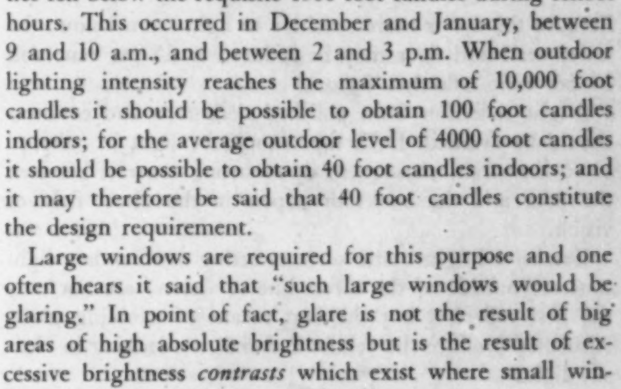
Translating these terms into classroom practice, it is the writer's opinion that natural illumination in classrooms should not fall below 15 foot candles and should never fall below one one-hundredth of the illumination intensity prevailing outdoors. (These measurements never involve light coming directly from the sun.) The line of vision from within a classroom should never include a view of the sun or of objects very strongly reflecting the direct sun. In other words, the sun is far from being the only possible source of light. The sky is a major source, and every object reflects sunlight in some degree thus becoming a source of light. Some objects are brighter sources than the sky itself: thus sunlit snow may be 40 times as bright as a deep blue sky, and even in the shade a white wall is brighter than a clear sky.

On dark days, when outdoor intensities reach fewer than 1500 foot candles, it is probable that the indoor level cannot in practice be raised above 15 foot candles (a ratio of 1:100); under such conditions supplementary artificial illumination will be required. Hourly tests were conducted in New York City at the Central Park Weather Observatory during the year 1938. So far as the school day was concerned, embracing the time span between 9 a.m. and 3 p.m., there were only two months during which intensities fell below the requisite 1500 foot candles during school hours. This occurred in December and January, between 9 and 10 a.m., and between 2 and 3 p.m. When outdoor lighting intensity reaches the maximum of 10,000 foot candles it should be possible to obtain 100 foot candles indoors; for the average outdoor level of 4000 foot candles it should be possible to obtain 40 foot candles indoors; and it may therefore be said that 40 foot candles constitute the design requirement.

Large windows are required for this purpose and one often hears it said that "such large windows would be glaring." In point of fact, glare is not the result of big areas of high absolute brightness but is the result of excessive brightness *contrasts* which exist where small windows are cut into large areas of wall.

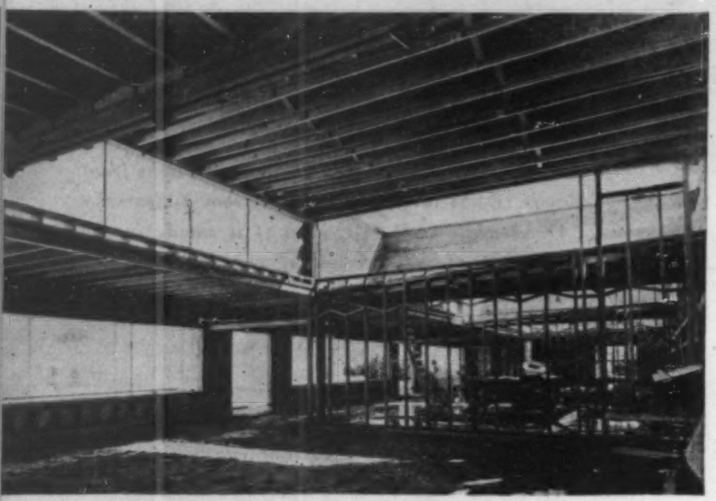
Design for Seeing Ease

Interior finishes are as important in daylighting as the reflector of a lamp in artificial illumination. Ceilings should be matte surfaced in a color just off white, with a reflection factor of 85 per cent. The walls above the chalkboard should have a reflection factor of about 65 per cent and the balance, including pinning boards, around 50 per cent.

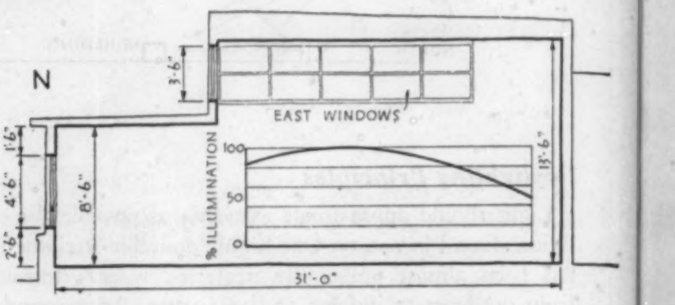


CLASSROOM TREND. Oblong classrooms, such as that shown to the left, have tended to become too long when activity alcoves were added. The square classroom is preferred

CLERESTORY LIGHTING EVOLUTION



Powell's Studio



1. ***Avenal School. Photograph shows construction, and section the effect, of lighting by means of monitors, like those of factories, offset to the north and west of each classroom***

Because the eye is more sensitive to light from below, the lower wall and floor may be reduced to 35 per cent and 20 per cent reflection factors.

Bright reflection from polished desk tops and counters should be avoided. Desk tops should be light in color to avoid the strain consequent upon strong contrast between the desk and the books or papers in the direct field of vision.

Extensive bright matte surfaces acting as secondary light sources (outside of the direct line of vision) are not only the best reflectors but the best means of avoiding glare. Also they produce the yellow and red rays lacking in clear sky light.

Summarizing we may say that a well lighted interior falls within the following limits of tolerance:

> Intensity: maximum obtainable ratio 1 indoors to 100 outdoors; minimum intensity 15 foot candles.
> Distribution: maximum ratio of 1:2, with the character of the light well diffused.
> Brightness: (meaning the reflection factor of everything within every possible line of vision) maximum ratio of 1:15.

Examples

The development of a square, well-lighted classroom led to the use of clerestory lighting. The author's first experiment at the Avenal School involved the use of square monitors with clerestory lights running around the angle formed by two adjacent sides.

In the Paso Robles School, published in the June, 1945, issue of Architectural Record, the system was changed to something roughly corresponding to the sawtooth system in factories. In order that the light might be diffused, and in order to avoid the glare of direct sunlight, all windows were placed to the north. An invention was made there which permitted the deflection of additional sunlight into the room by means of a parapet wall acting as a reflector (see diagram). (The high brightness of white-walled buildings in strong sunlight is familiar to us all.) This parapet has been especially useful on clear sunny days when there has been an absence of white clouds to act as reflectors from the north. The parapet is outside the direct line of vision from within the classroom (see photograph of similar classroom, page 85).

Structural Characteristics

This solution is simple in construction and presents no special difficulties in framing to resist seismic forces. The windows are continuous both in the lower exterior wall and in the clerestory. The lower window mullions are pipes of 2-in. diameter. The upper or clerestory mullions are pipes of 1½-in. diameter, with steel hanger rods threaded through the pipe. A 16-in. steel beam at the head of the clerestory windows spans the entire 32-foot length of the room. On it are carried the sloping rafters above the high ceiling area of the room and from it the lower roof is carried by suspension. Both roofs are used as diaphragms transferring the lateral forces to solid-sheathed shear walls acting as partitions between classrooms, and to the columns on the corridor side plus the corridor shear walls.

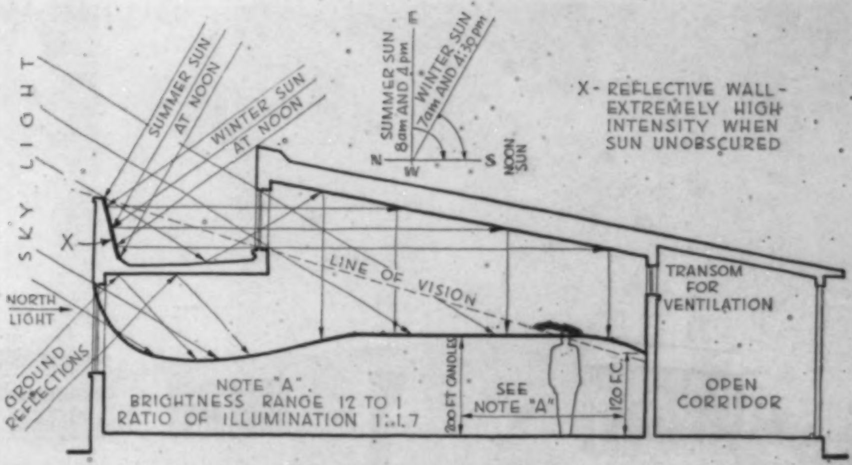
Plan Variations

The basic type of plan and vertical section that was adopted at Paso Robles School has proved to be flexible enough to lend itself to a number of planned variations. At Paso Robles it was used with a *single-loaded* corridor running east-west. The corridor was kept to the south and the parapet and clerestory were run full-length along the northern side. In the case of the Lakeside School (see pages 80-86) the corridor again runs east-west but is *double-loaded*. This means that one row of lower classroom windows has to face south and is protected against the entry of direct sun rays by a louvered sun-break. The Delano plan (pages 87-89, immediately preceding this article) is perhaps the most interesting because the corridors run north and south and the clerestories are run transversely across the corridors as well as the rooms. Once the factors involved are thoroughly understood, many such variations can be worked out, provided only that all sources of extraneous glare are carefully screened or eliminated.

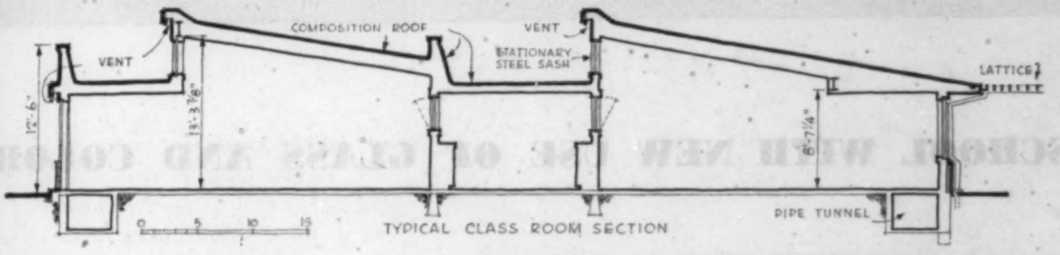
General Observations

Although data are available that help estimate in advance the intensities of light under different relationships

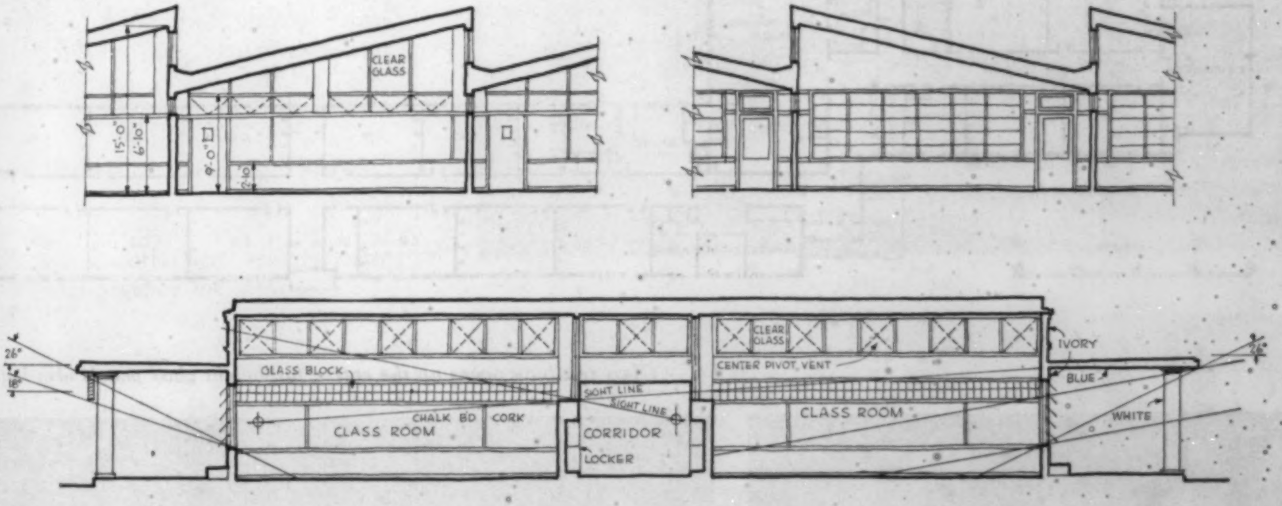
IN SCHOOLS


SKY LIGHT
SUMMER SUN AT NOON
WINTER SUN AT NOON
SUMMER SUN 8am AND 4pm
WINTER SUN 7am AND 4:30pm
E
N
W
S
NOON SUN
X - REFLECTIVE WALL - EXTREMELY HIGH INTENSITY WHEN SUN UNOBSCURED
X
NORTH LIGHT
GROUND REFLECTIONS
LINE OF VISION
TRANSOM FOR VENTILATION
NOTE "A" BRIGHTNESS RANGE 12 TO 1 RATIO OF ILLUMINATION 1.:1.7
200 FT. CANDLES
SEE NOTE "A"
120 F.C.
OPEN CORRIDOR

2. *In schools of the Paso Robles type, discovery of* sawtooth *principle, with sloping ceiling and an auxiliary reflecting parapet outside*


VENT
COMPOSITION ROOF
VENT
STATIONARY STEEL SASH
LATTICE
12'-6"
13'-3 7/8"
8'-7 1/4"
0 5 10 15
TYPICAL CLASS ROOM SECTION
PIPE TUNNEL

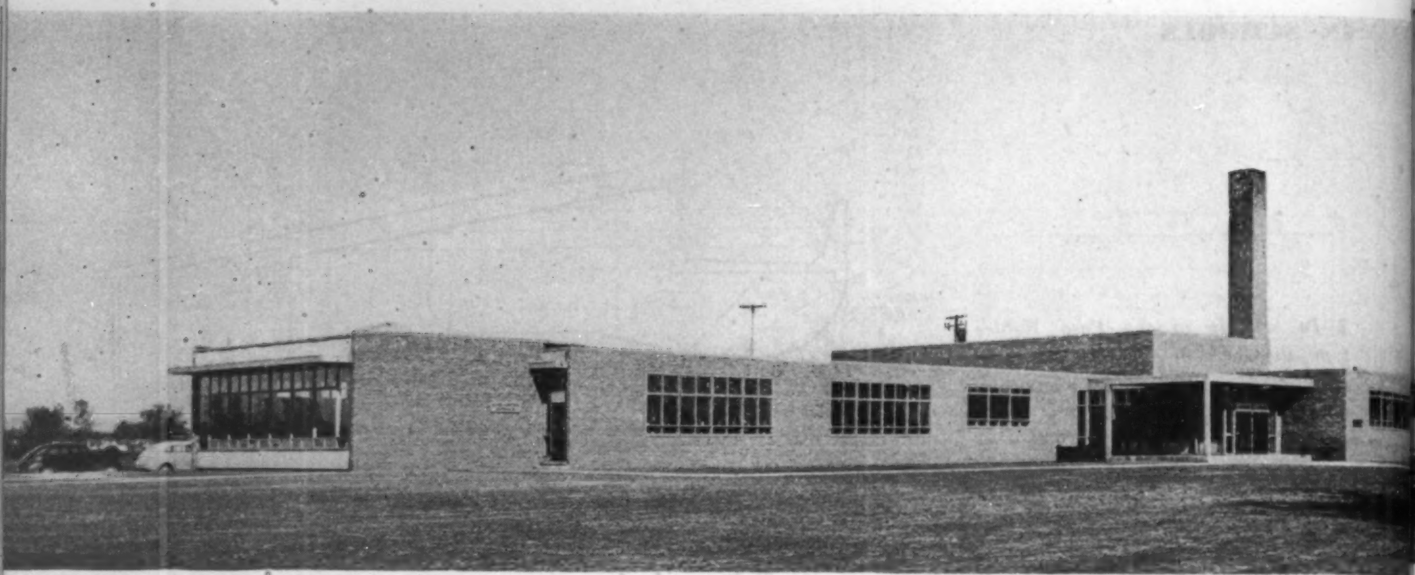
3. *Lakeside School.* **Longitudinal** *clerestories, like those of Paso Robles, used on* **both** *sides of an east-west corridor instead of a single side. This involves differentiations*


CLEAR GLASS
15'-0"
6'-10"
9'-0"
2'-6"
26°
18°
GLASS BLOCK
CHALK BD
CORK
CLASS ROOM
SIGHT LINE
SIGHT LINE
CORRIDOR
LOCKER
CLEAR GLASS
CENTER PIVOT VENT
CLASS ROOM
IVORY
BLUE
WHITE

4. *Proposed Delano School addition Here the corridors will run north-south instead of east-west, and sawteeth will be turned* **transverse.** *Shading by colonnades is useful*

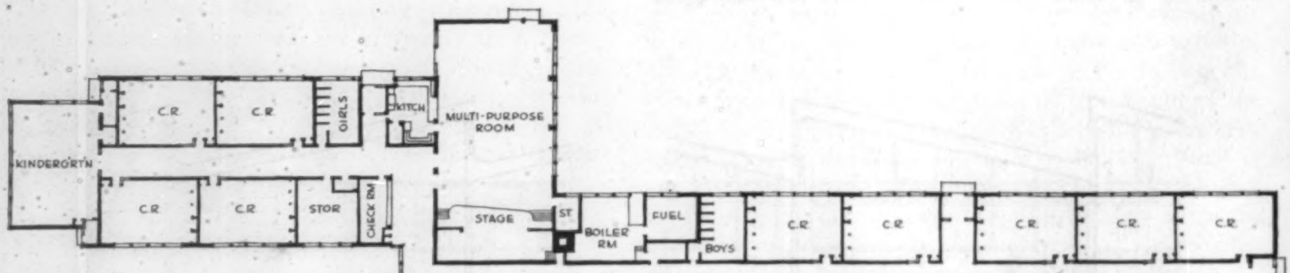
of room depth, height, and window area, yet the value is slight, because there are so many variables of surface, material, color, and surroundings.

The solutions herewith presented have proven practical and beneficial in Southern California where the sun is relatively brilliant. Also, there is no problem of snow in the trough formed by the lower part of the roof and its parapet. Other solutions may be necessary in climates with weaker sun and more snow and yet it is extremely desirable from a daylighting standpoint to avoid the control problems that are involved where windows face east, south or west. Further research is desirable even in the hot climates. For example, what are the heat reflection characteristics of a white sun-reflecting wall? In actual use this kind of a reflector has developed no objection but the writer would still like to know.

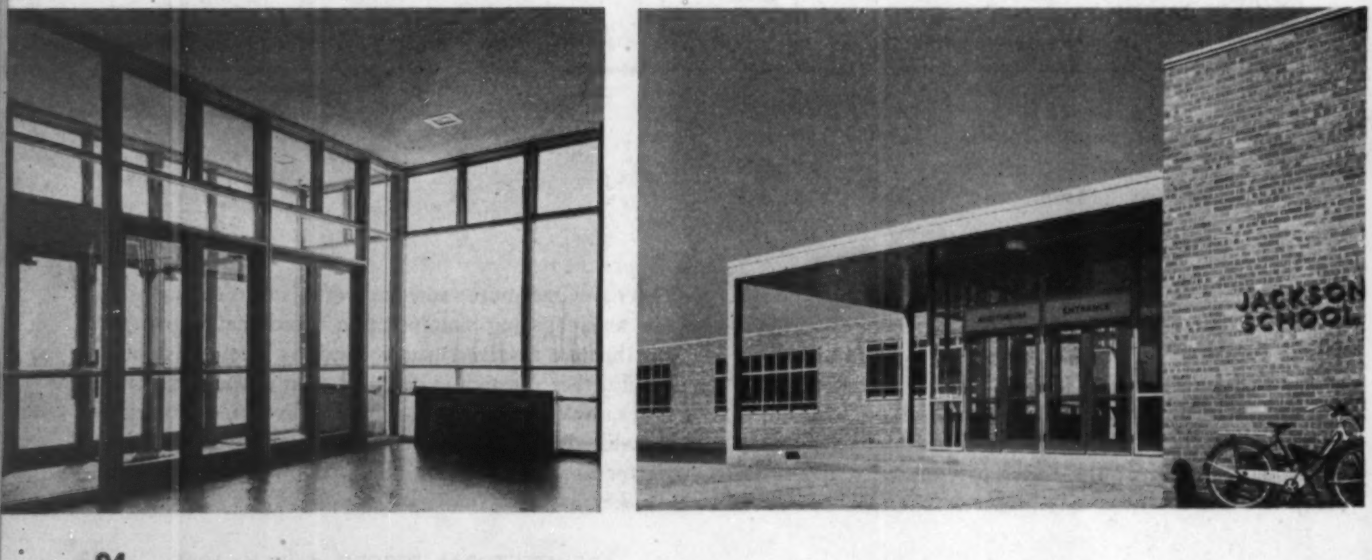


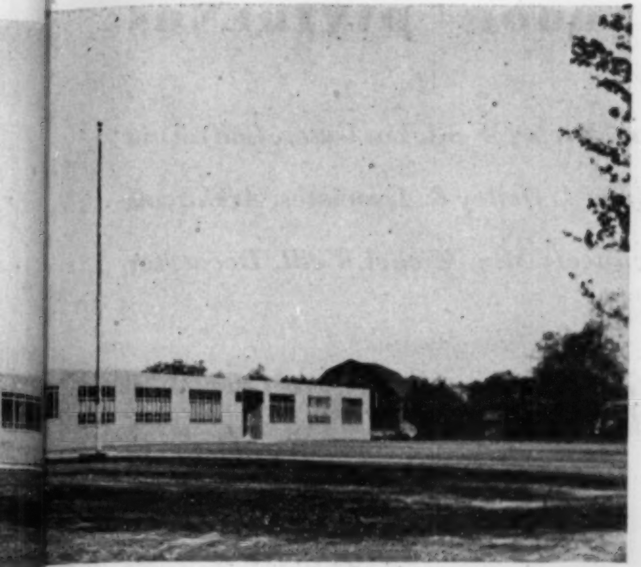
A WAR SCHOOL WITH NEW USE OF GLASS AND COLOR

Jackson School, Wayne Co., Mich. • *O'Dell, Hewlett & Luckenbach, Architects*


C.R.
C.R.
GIRLS
KITCH
MULTI-PURPOSE ROOM
KINDERG'RTN
C.R.
C.R.
STOR
CHECK RM
STAGE
ST
BOILER RM
FUEL
BOYS
C.R.
C.R.
C.R.
C.R.
C.R.
TCHERS
PRINC
CLINIC
C.R.
C.R.
C.R.
ST
C.R.
C.R.
C.R.
0
20
40
60
80

Glass vestibule opens up the entry; full-height glass panels also help


ENTRANCE
JACKSON SCHOOL

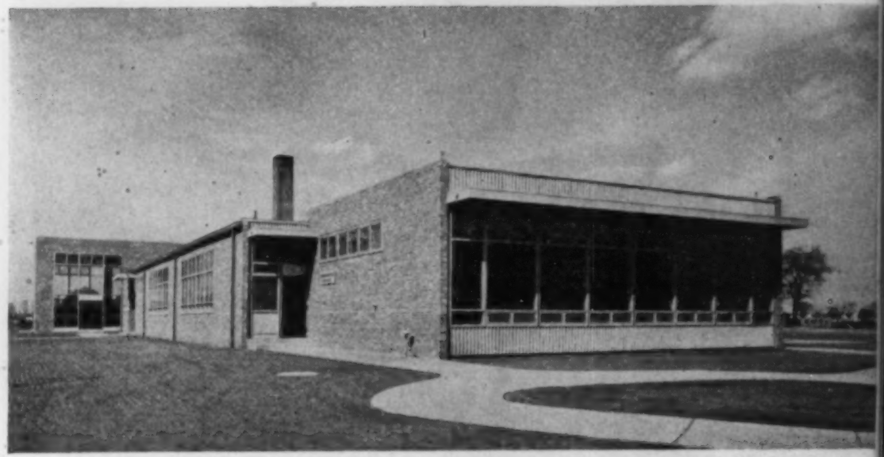


Elmer L. Astleford photos

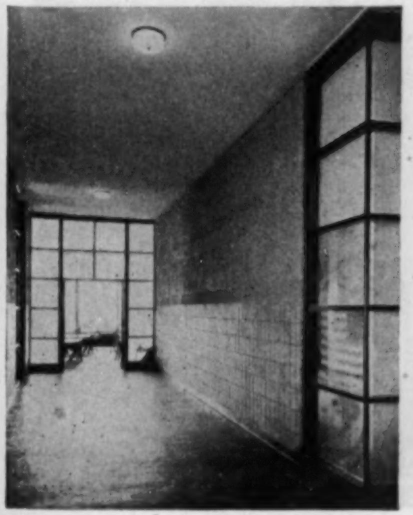
Warm colors and the contrast between brick and glass help to enliven an extremely simple exterior. In the view below, note the tall light, showing left rear, of the multi-purpose room. The interior view, bottom right, is taken in the kindergarten

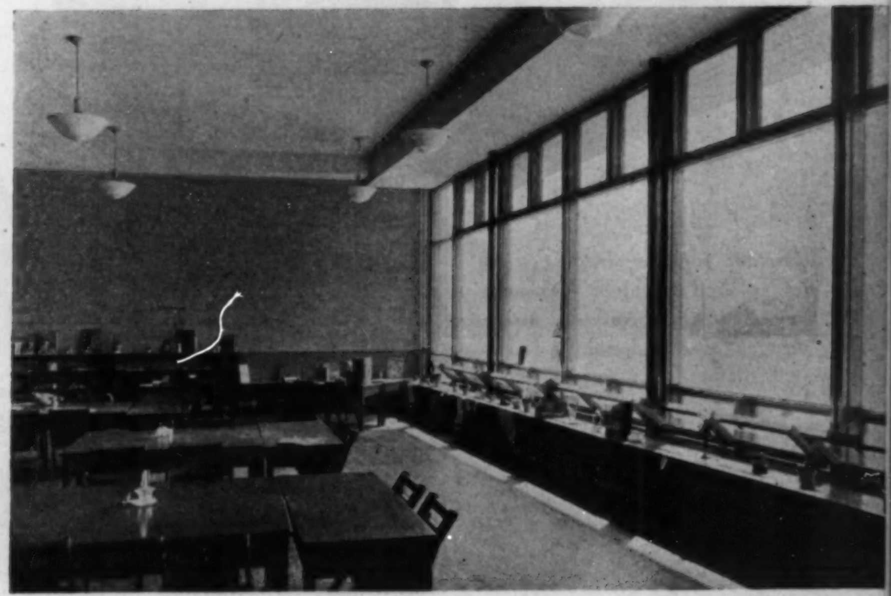
THIS war school was completed within the year, at a cost of $178,000, for 500-600 elementary pupils. It is of cinder-block construction, faced with brick veneer of a warm reddish tan, with white trim, red doors. Corrugated transite trims the end-wall screens. Corridor walls are lined with blue-gray face tile.

The glass reaches from ceiling to floor in many places: at the entrance vestibules, in the multi-purpose room, and in glass panels next to classroom doors, borrowing light from the corridor. The principal and teachers were so fond of the effect they were ready to replace breakage: to date there has been none. The inward recessing of classroom doors permits opening outward, in keeping with legal requirements, without obstructing the corridor.



to light the corridor



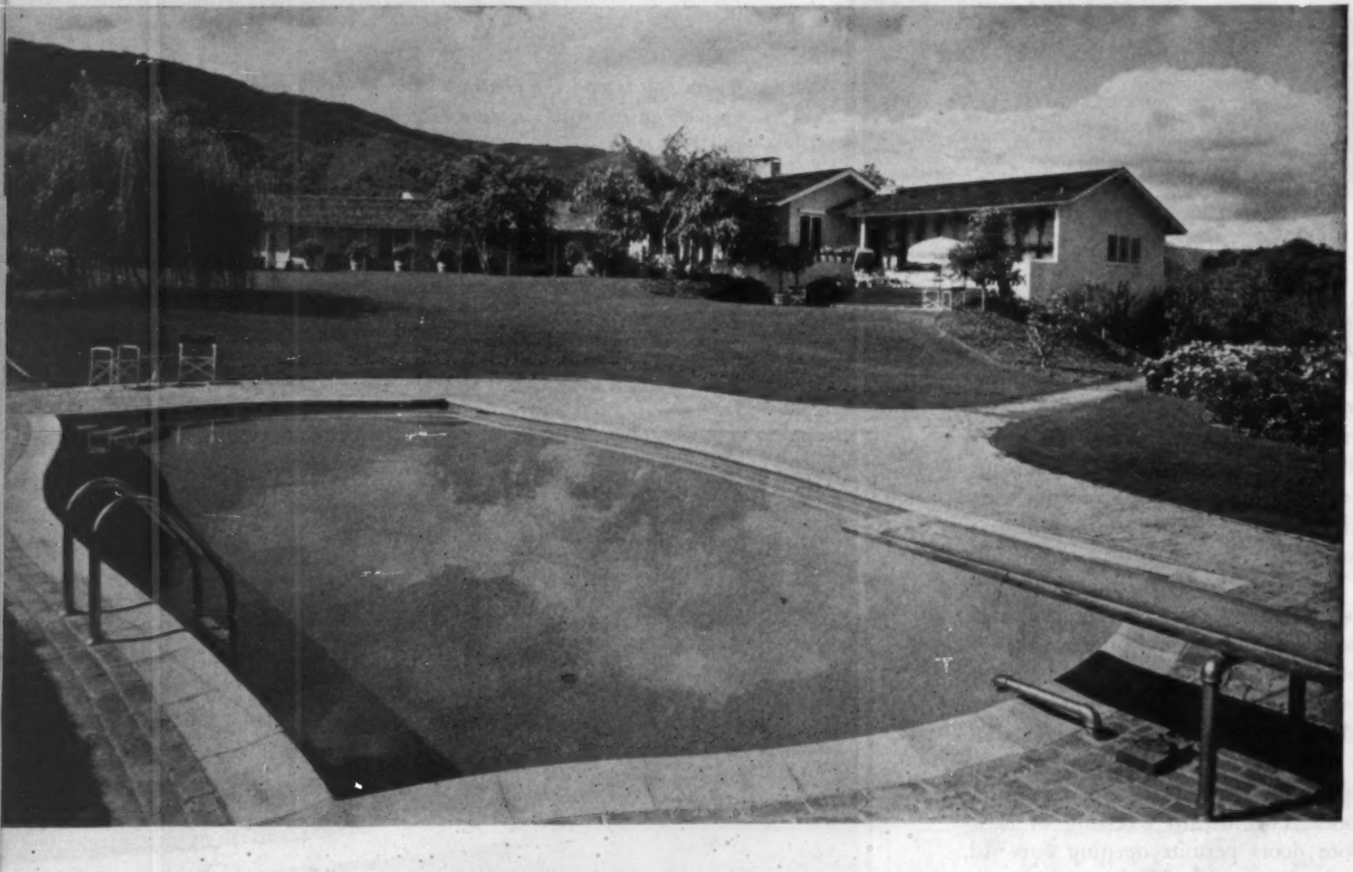


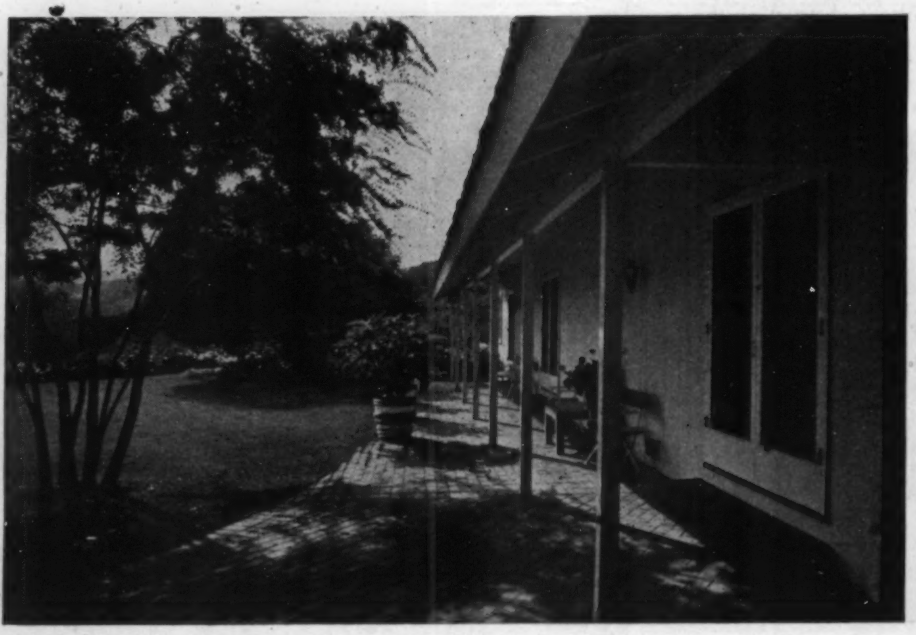
A HOUSE DIVIDED FOR OUTDOOR DIVIDENDS

Residence for Mr. and Mrs. Michel Weill, Los Gatos, California

Gardner A. Dailey & Associates, Architects

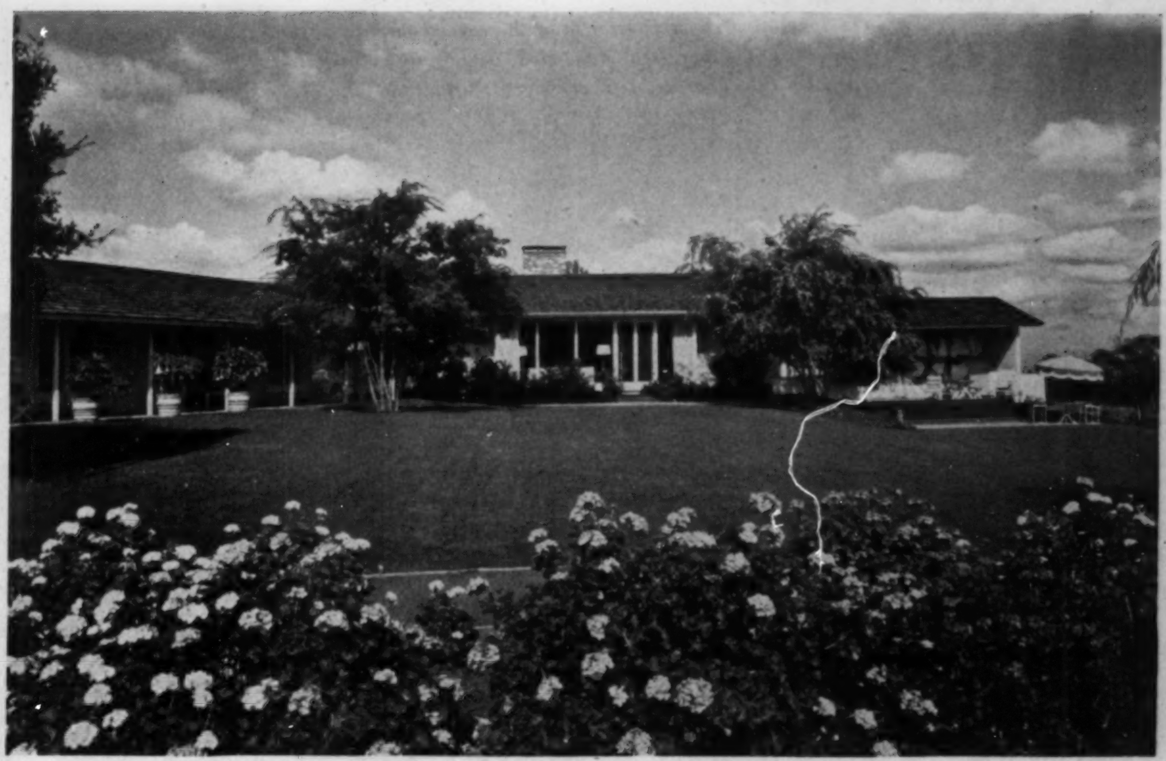
Thomas D. Church, Landscape Architect; Mrs. Michel Weill, Decorator

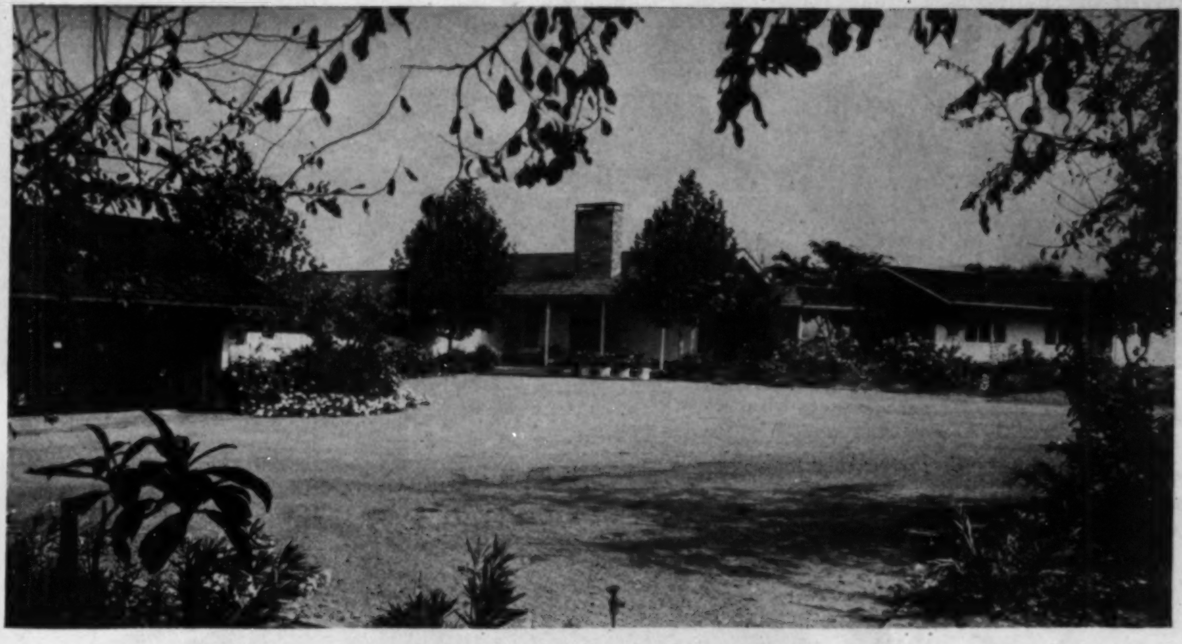




Corridor for the sleeping wing is covered outdoor passage; but bedrooms connect inside through their dressing rooms

Roger Sturtevant photos



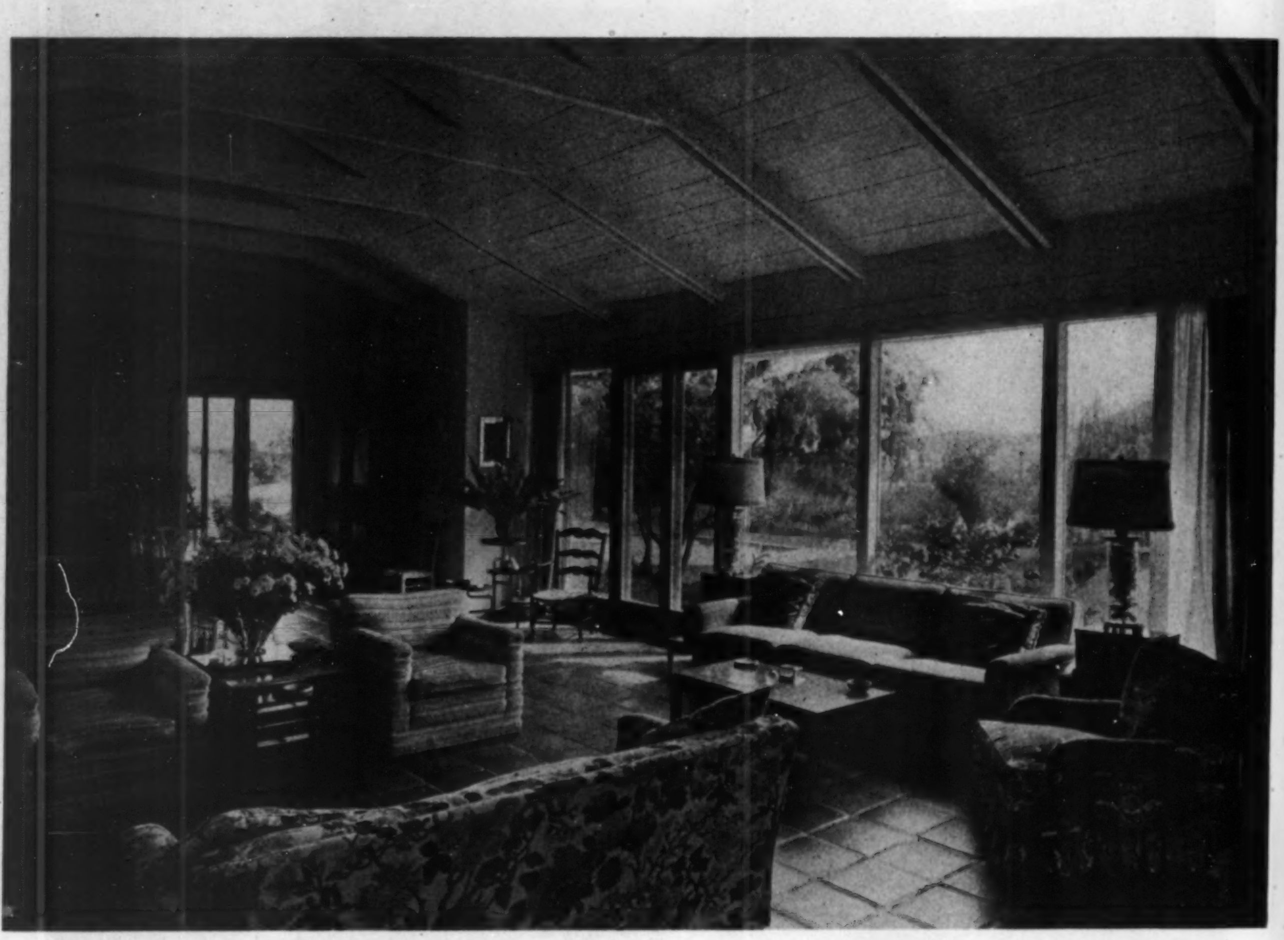


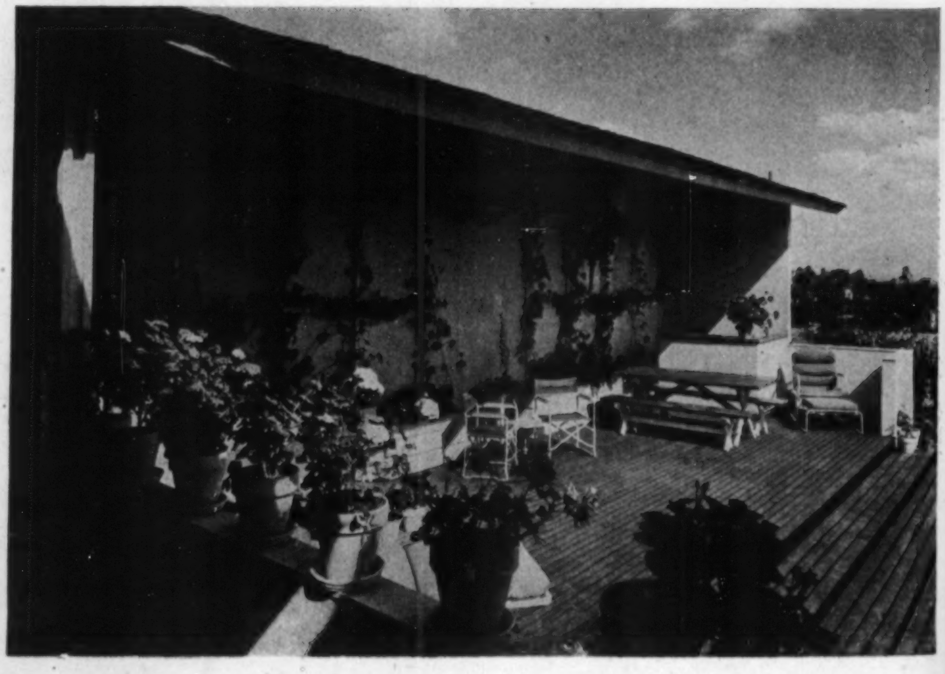
To take advantage of an inviting climate for outdoor living, this house opened out its wings to the point where it split into separate sections. It is located in the rolling country of the foothills of the Santa Cruz Mountains, about 50 miles south of San Francisco. The climate is warm and pleasant for most of the year, and San Franciscans come out to these hills for long summer seasons.

This house really has three distinct sections, with the sleeping wing actually a separate house. It is placed aside to give the living-dining space sun and view on three sides, and is angled off to prevent interference with the view—also to serve as protection against occasional chilly winds. The servants' wing, at

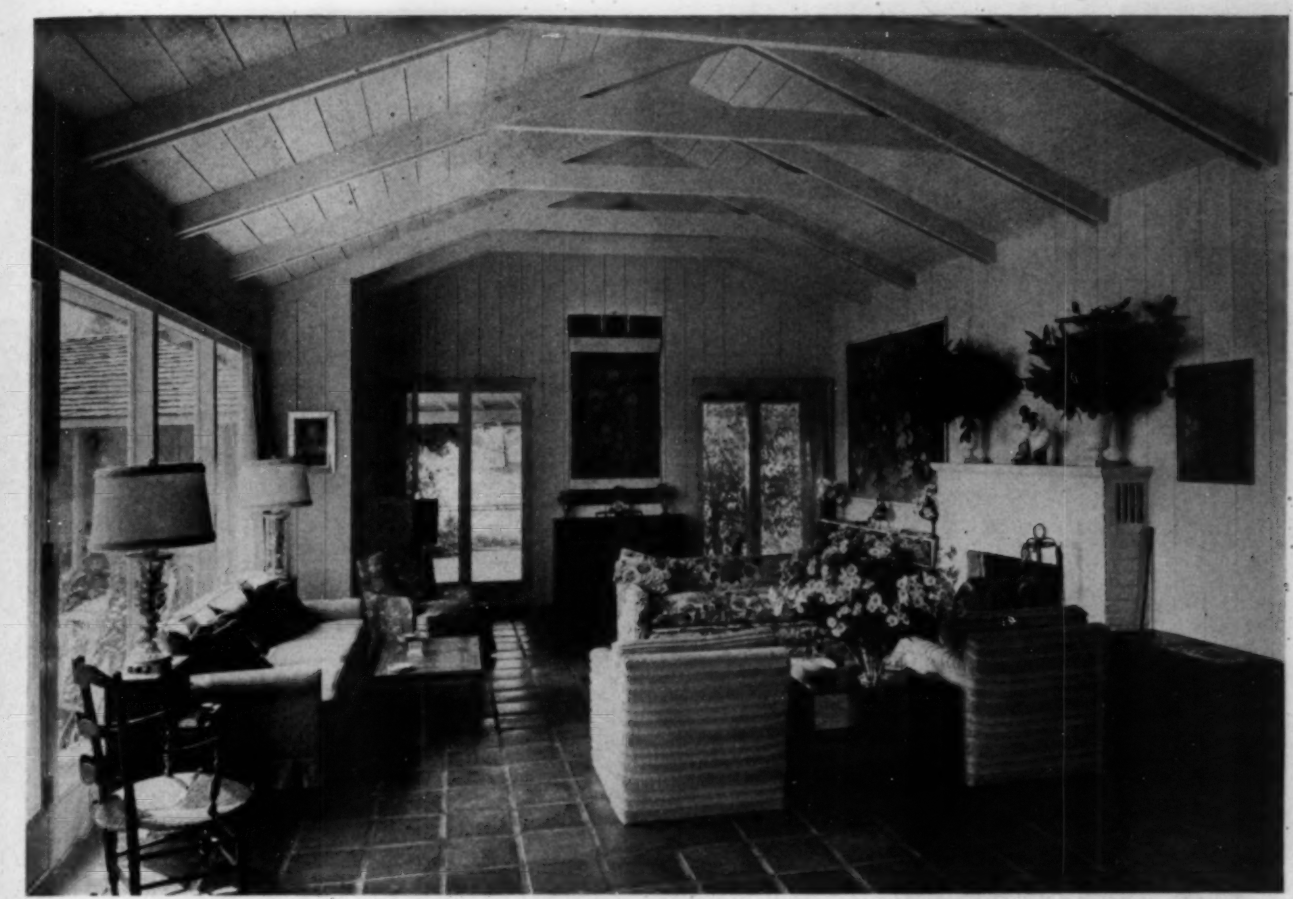
Extensive lawns on either side of the house invite enjoyment of sunshine and views. The separate wings are angled to protect the terraces from chilling winds

Living-dining room interior is of the same boarding as the exterior, white-washed with cold-water paint. Floor is of hand-made mahogany colored tile, 12 in. square, waxed to a high polish; this flooring, left uncovered, brings an outdoor coolness in the summer weather





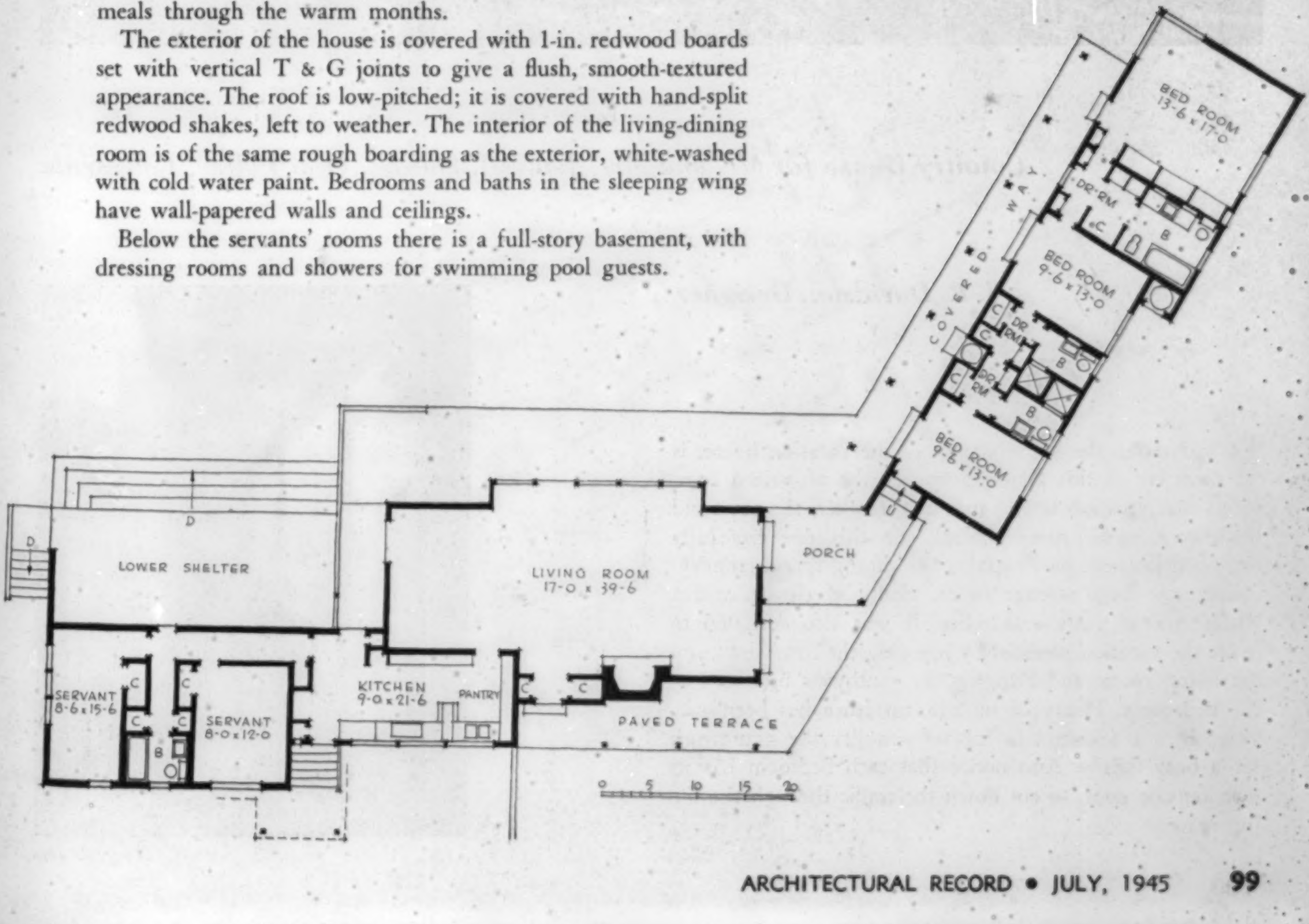
A small bar (at the far end) prolongs the usefulness of the dining terrace, where all meals are served in summer



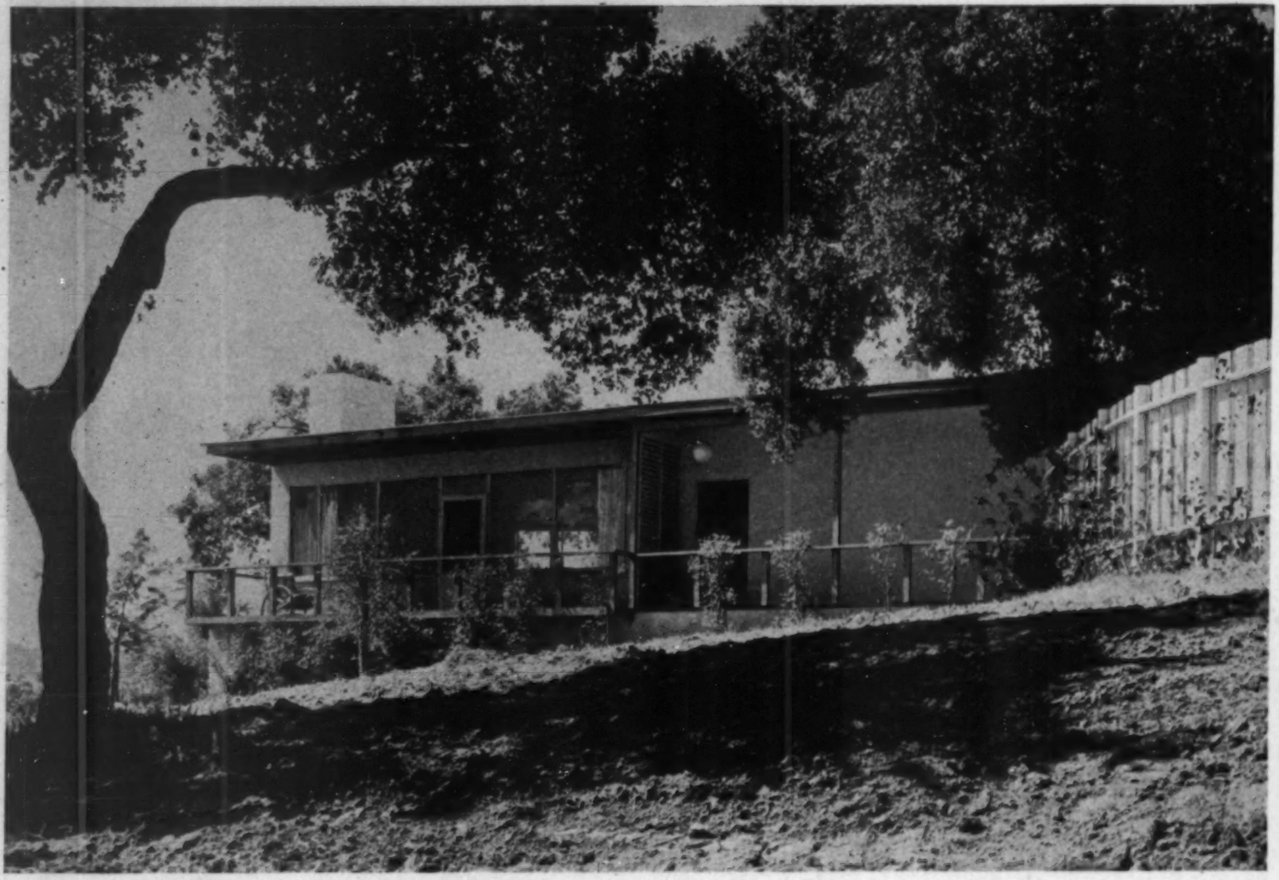
the far end of the main section, is utilized as a windbreaker to shelter an outdoor dining terrace, which serves for almost all meals through the warm months.

The exterior of the house is covered with 1-in. redwood boards set with vertical T & G joints to give a flush, smooth-textured appearance. The roof is low-pitched; it is covered with hand-split redwood shakes, left to weather. The interior of the living-dining room is of the same rough boarding as the exterior, white-washed with cold water paint. Bedrooms and baths in the sleeping wing have wall-papered walls and ceilings.

Below the servants' rooms there is a full-story basement, with dressing rooms and showers for swimming pool guests.


BED ROOM 13-6 x 17-0
COVERED WAY
DR-RM
C
B
BED ROOM 9-6 x 13-0
DR RM
C
B
DR RM
C
B
BED ROOM 9-6 x 13-0
U
PORCH
LIVING ROOM 17-0 x 39-6
D
LOWER SHELTER
D
SERVANT 8-6 x 15-6
C
C
B
C
C
SERVANT 8-0 x 12-0
KITCHEN 9-0 x 21-6
PANTRY
C
C
PAVED TERRACE
0 5 10 15 20

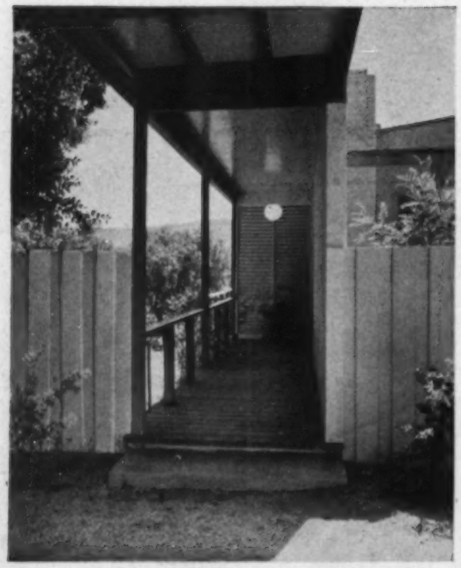
VACATION HOUSE with emphasis on the vacation



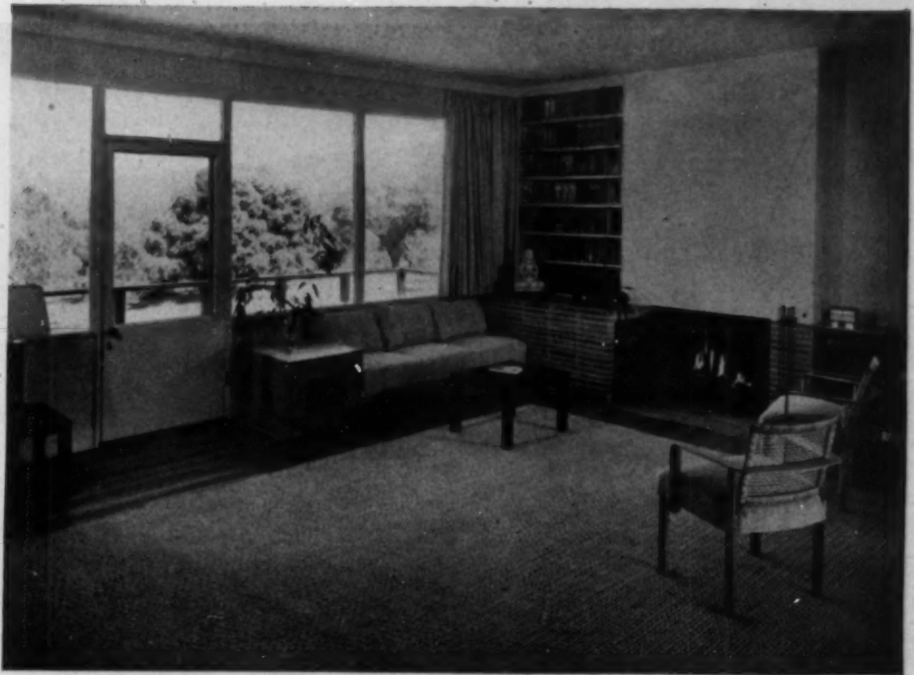
Country House for Mr. and Mrs. James Vigeveno, Ojai Valley, California

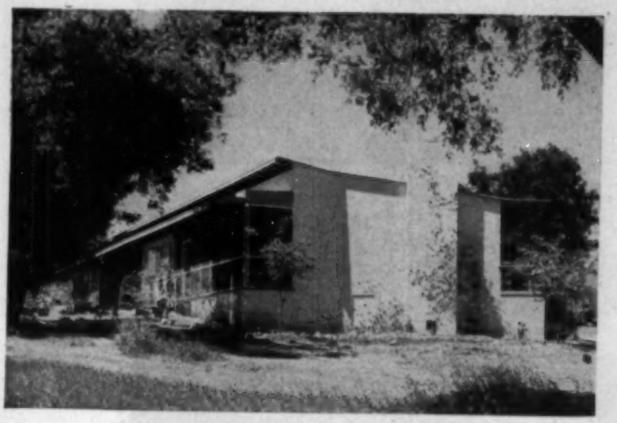
J. R. Davidson, Designer

To emphasize the vacation part of the vacation house, is the objective of this plan—to obviate the oft-voiced complaint that vacation houses mean, to mother, the same old housework made more difficult. So this one has fully equipped kitchen; pass cupboard to dining space; laundry; incinerator; huge storage room, plenty of closets, and a whole row of extra wardrobes. It was also designed to make the vacation pleasant by bringing the fine views into the living room, and bringing the southwest breezes into the bedrooms. Plenty of built-in furniture has been provided by the architect to further simplify the housework for a busy family. And notice that each bedroom has its own outside door, to cut down the traffic through the living space.

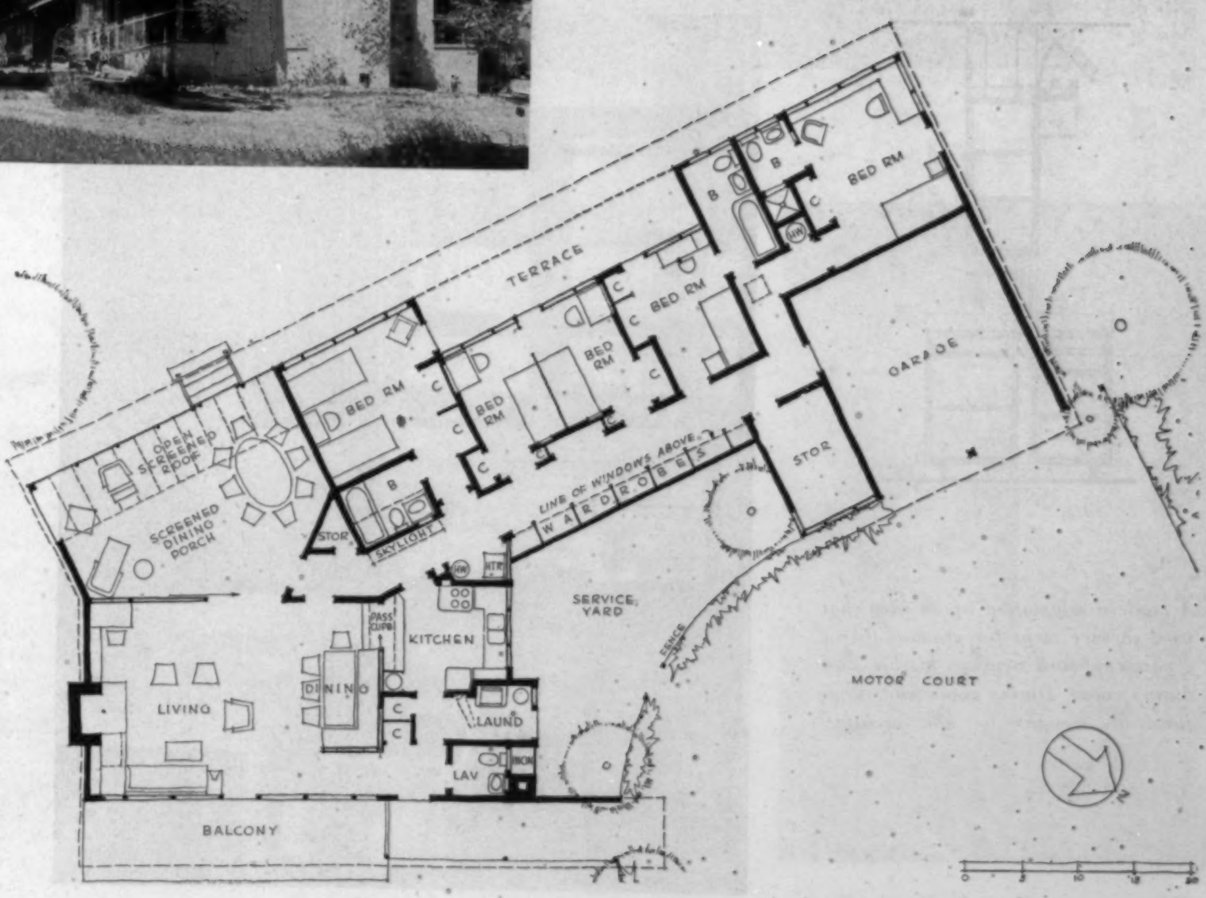


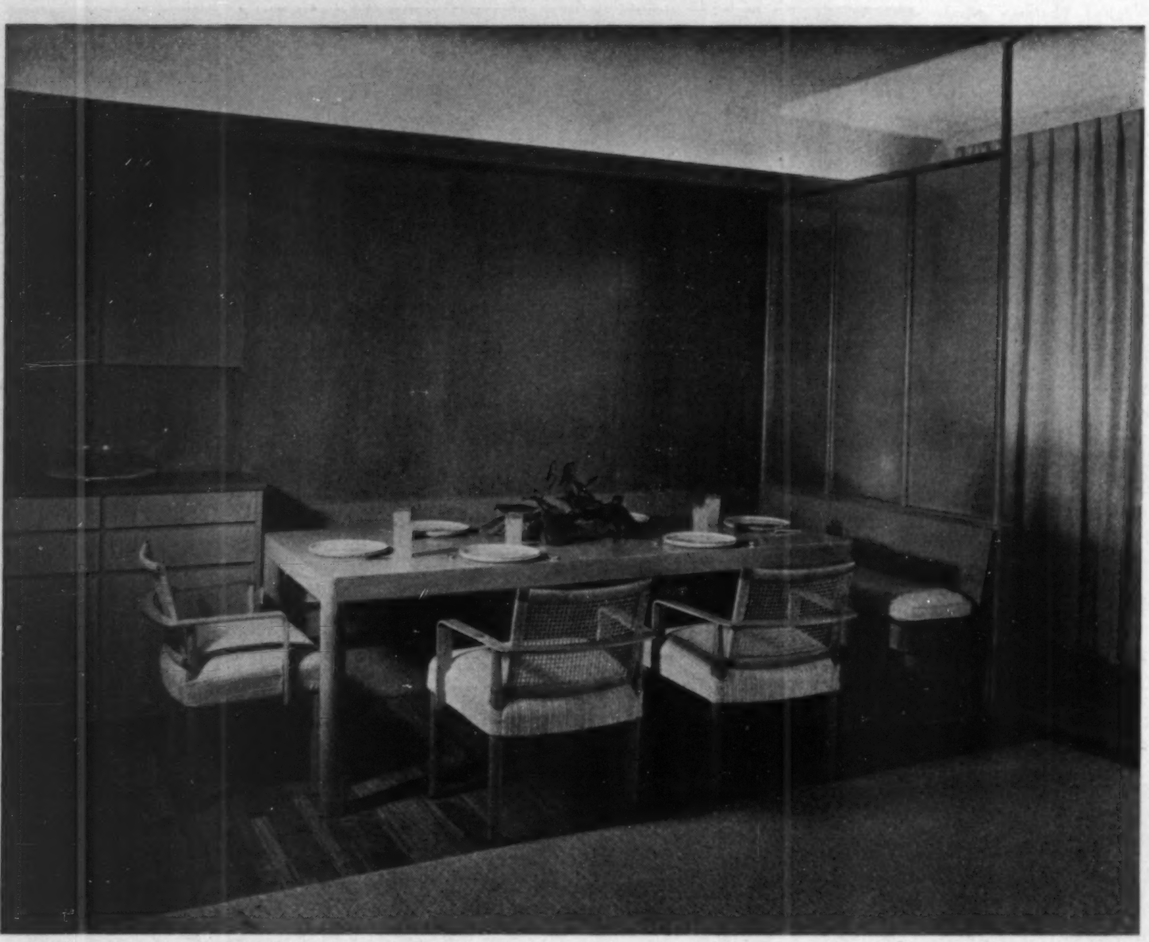
Julius Shulman photos

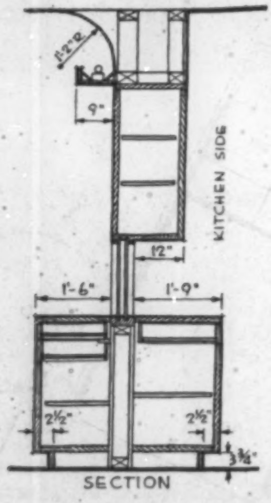




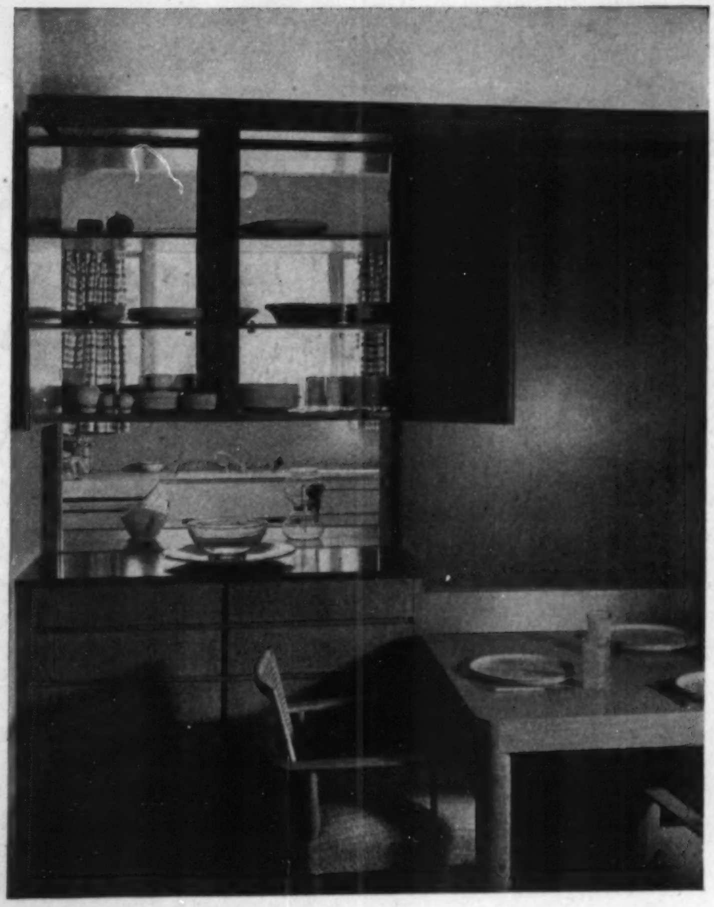
In the plan below, the second and third bedrooms were kept small, later to be combined into one room by simply removing the T & G partitioning. Separate entrances to many rooms tend to cut down traffic at the living-dining areas


OPEN SCREENED ROOF
SCREENED DINING PORCH
BED RM
B
STOR
SKYLIGHT
C
BED RM
BED RM
BED RM
TERRACE
B
B
BED RM
HW
GARAGE
STOR
LINE OF WINDOWS ABOVE
WARDROBES
HW
HTR
PASS CUPB
KITCHEN
DINING
LIVING
LAUND
LAV
BALCONY
SERVICE YARD
FENCE
MOTOR COURT
N
0
5
10
15
20

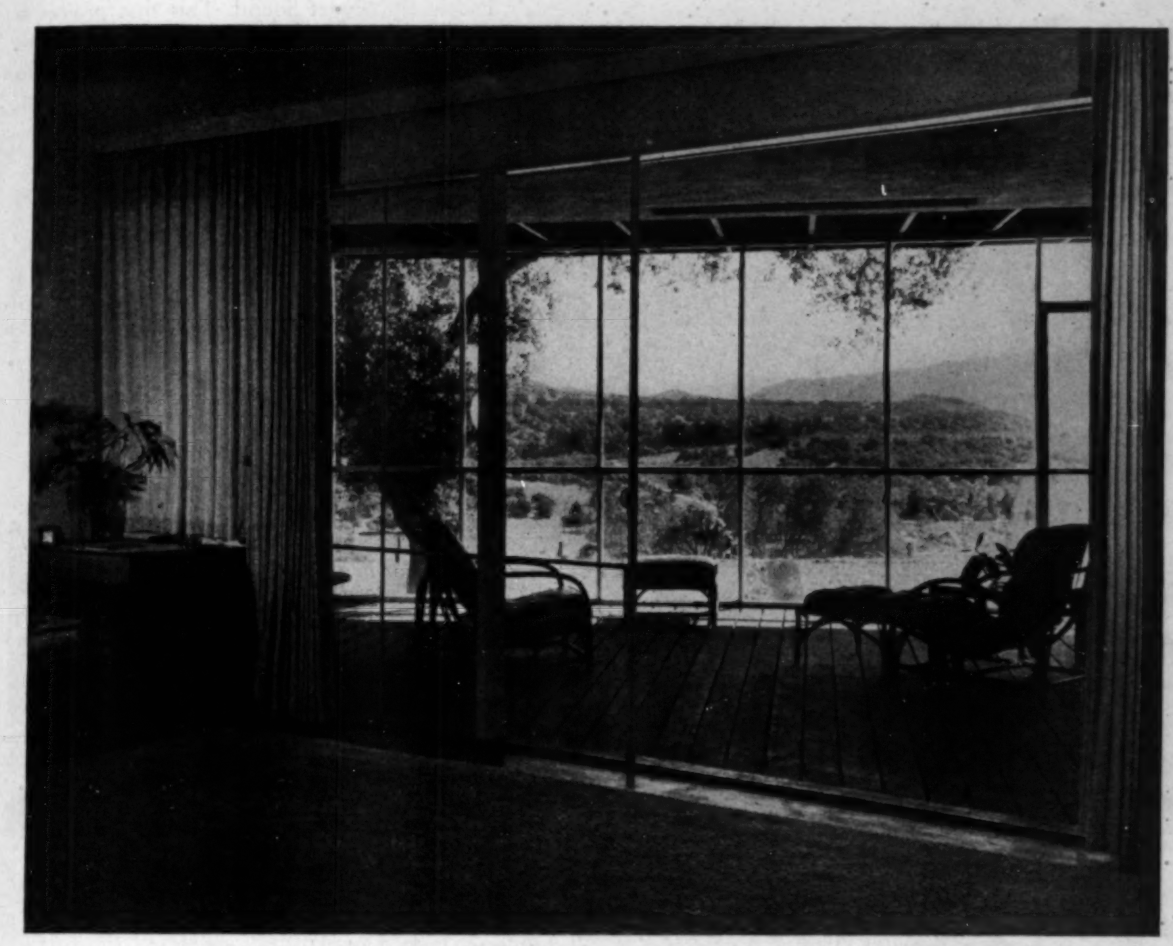


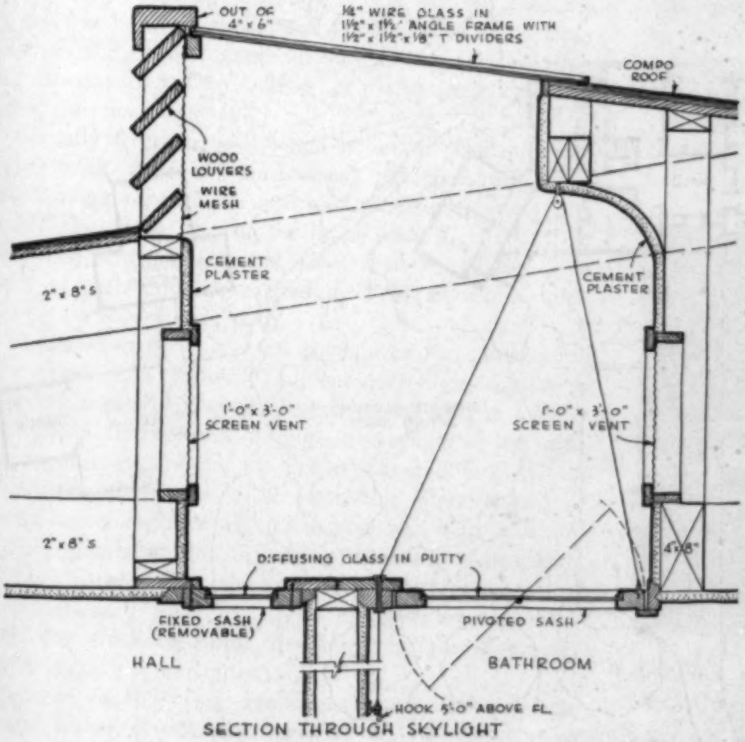

1'-2"R
9"
KITCHEN SIDE
12"
1'-6"
1'-9"
2½"
2½"
3¾"
SECTION

A modern adaptation of an idea that used to save steps for grandmother—a pass cupboard between kitchen and dining room. Dining room and other furniture designs by the architect



Sliding glass doors open the living room to expansive views and to summer breezes. Below: windows above wardrobes light the bedroom corridor; in foreground, telephone booth (hinged seat propped open)




OUT OF 4" x 6"
½" WIRE GLASS IN 1½" x 1½" ANGLE FRAME WITH 1½" x 1½" x ⅛" T DIVIDERS
COMPO ROOF
WOOD LOUVERS
WIRE MESH
CEMENT PLASTER
2" x 8" S
CEMENT PLASTER
1'-0" x 3'-0" SCREEN VENT
1'-0" x 3'-0" SCREEN VENT
2" x 8" S
4" x 8"
DIFFUSING GLASS IN PUTTY
FIXED SASH (REMOVABLE)
PIVOTED SASH
HALL
BATHROOM
HOOK 5'-0" ABOVE FL.

SECTION THROUGH SKYLIGHT

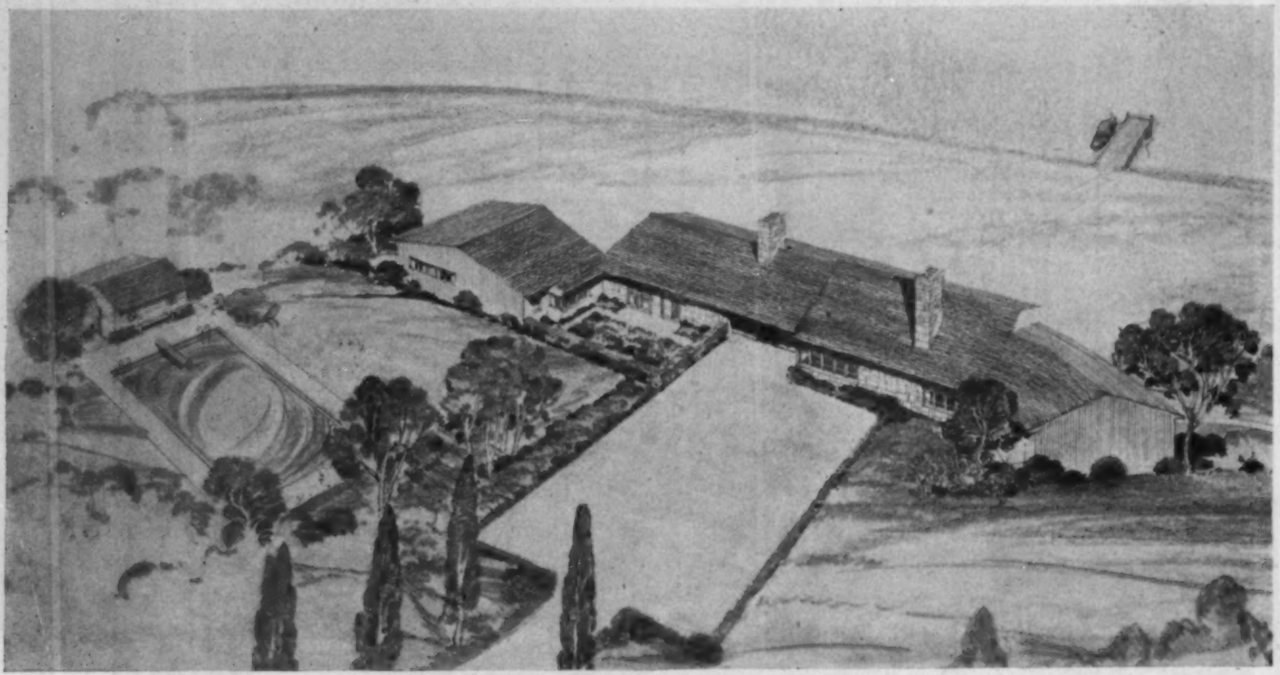
TO START A NEW TOWN

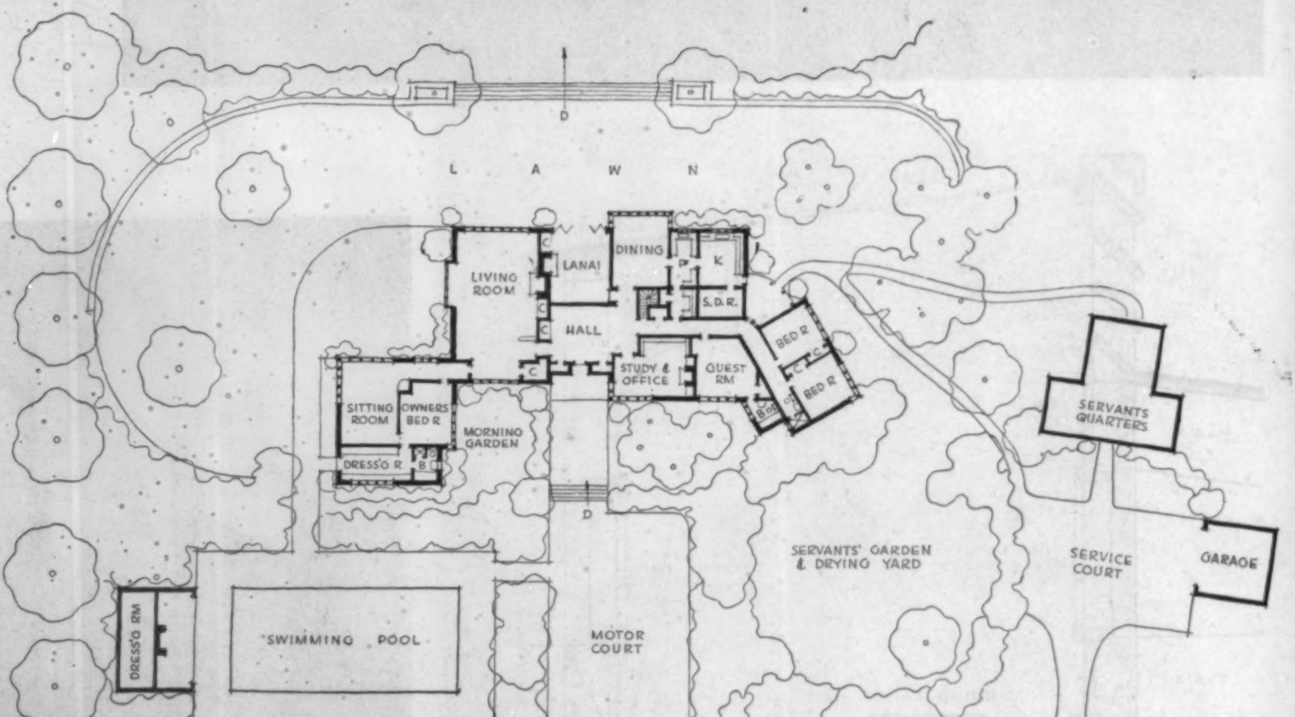
Residence for Mr. and Mrs. Paul McMillin

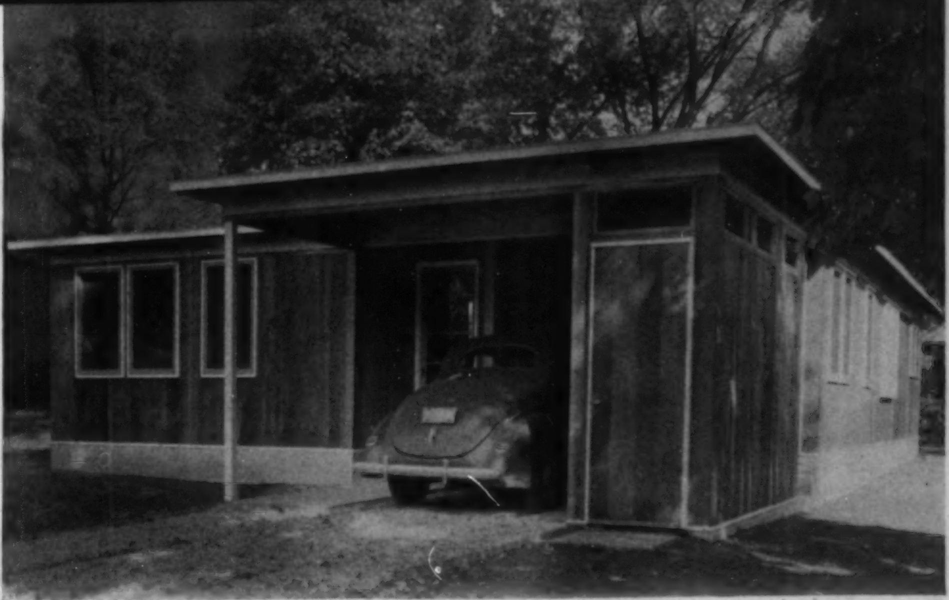
Roche Harbor, Washington

J. Lister Holmes & Associates, Architects

Ambitious plans are in the making for the postwar redevelopment of the long-established one-industry town of Roche Harbor, Wash., to do justice to a naturally beautiful setting near the San Juan Islands in the straits between the Pacific and Puget Sound. This first project is a new home for the town's industrialist, with a new town plan and new workers' houses to follow. Edwin W. Grohs, landscape architect.




D
L A W N
LIVING ROOM
LANAI
DINING
K
P
S.D.R.
HALL
C
STUDY & OFFICE
GUEST RM
BED R
BED R
B
SITTING ROOM
OWNERS BED R
MORNING GARDEN
DRESS'G R
SERVANTS QUARTERS
SERVANTS' GARDEN & DRYING YARD
SERVICE COURT
GARAGE
DRESS'G RM
SWIMMING POOL
MOTOR COURT



Factory-built units make up a 4 or 5 room house that may be seen in plan on page 107. Storage unit door at right is not main entrance

YOUTZ UNIT SYSTEM OF PREFABRICATION

THE DEVELOPMENT of integrated house building systems using mass-produced parts has occupied many minds and produced a variety of results during the war. One of the most interesting systems with some unusual advantages was developed, constructed and successfully tested at the University of Michigan, and is now known as the "Youtz Unit House."

George B. Brigham, associate professor of architecture at the University was commissioned to conduct this research under the war emergency act. The project, authorized by the Consumer Products Branch of the Office of Production Research and Development of the WPB, through Philip Youtz, former branch chief, was originally intended for war emergency use. However, because of the delay in obtaining materials, it later became applicable to postwar housing. Because of the flexibility and adaptability of the system, houses of various sizes and facilities can be constructed by adding or rearranging the basic units. (see pages 106-107.)

Basically the structural system is one of post and lintel frame with walls of standardized interchangeable non-load-bearing panels; floor and roof panels are factory produced also. Each unit of the house is 8 ft. wide, 16 ft. long and 8 ft. clear height from floor to ceiling. Roof loads of each unit are carried by 2 in. by 12 in. girts resting on four corner posts.

The contract for this research required the construction of a complete factory-built unit one-story high, as wide as highway regulations would permit (8 ft.) and as long as practicable. These units were to be capable of assembly side by side, end to end, or end to side, and further, that all exterior walls were to be removable laterally, and all panels interchangeable with each other and with door and window panels without disturbing the floor or roof. Only the four corner posts which support each unit would remain stationary. In these respects the units were to differ from the truckable units developed by the Tennessee Valley Authority and others.

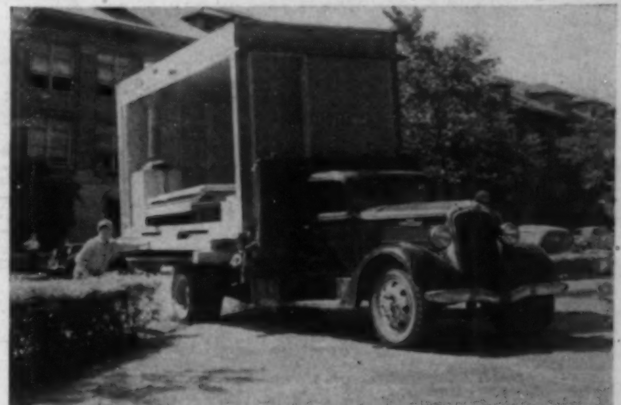
Because of the acute steel shortages at the time the project began, it was also specified that the units must be entirely of wood; however, this restriction was subsequently relaxed and the final result was affected accordingly.

Floor and Roof Panels

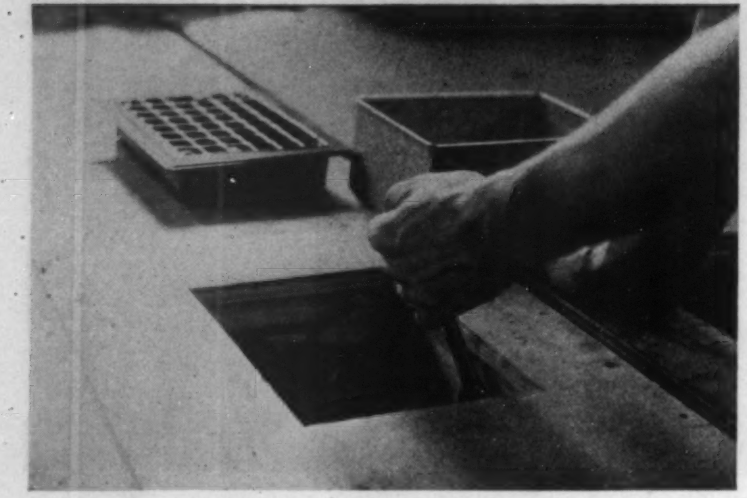
The roof sections are single 8 ft. by 16 ft. panels using stressed-skin construction.

In the factory-built design (see structural diagram, page 107) the floor panel has a steel joist frame with a 2 in. plank structural floor with a ⅛-in. thick finished floor of Masonite Prestwood, attached to the top of the joists. Vaporseal Celotex was installed at the level of the bottom of the joists, forming a plenum chamber 10 in. high through which heat could be circulated. Registers were strategically located so that they could be used for access to bolts which unite the units below the floor. Where registers were unnecessary, a solid panel flush with the floor filled the opening.

In this construction method, units are joined and secured at ceiling level by bolts through the 2 by 12 in. girts.



Units 8 ft. by 16 ft. in plan are trucked separately and assembled at the site by bolting. Special channel connectors join units and cover joints



Above: Conveniently placed register openings permit access for bolting of units. Right: Interchangeable panels are ingeniously detailed

These boltheads are covered with small cover plates which, with their regular spacing, produce a decorative effect. Roof joints, where units come together, are sealed with a metal channel molding similar to that used for wall panels, and in addition this molding is set in and covered with asphaltic-type roofing mastic.

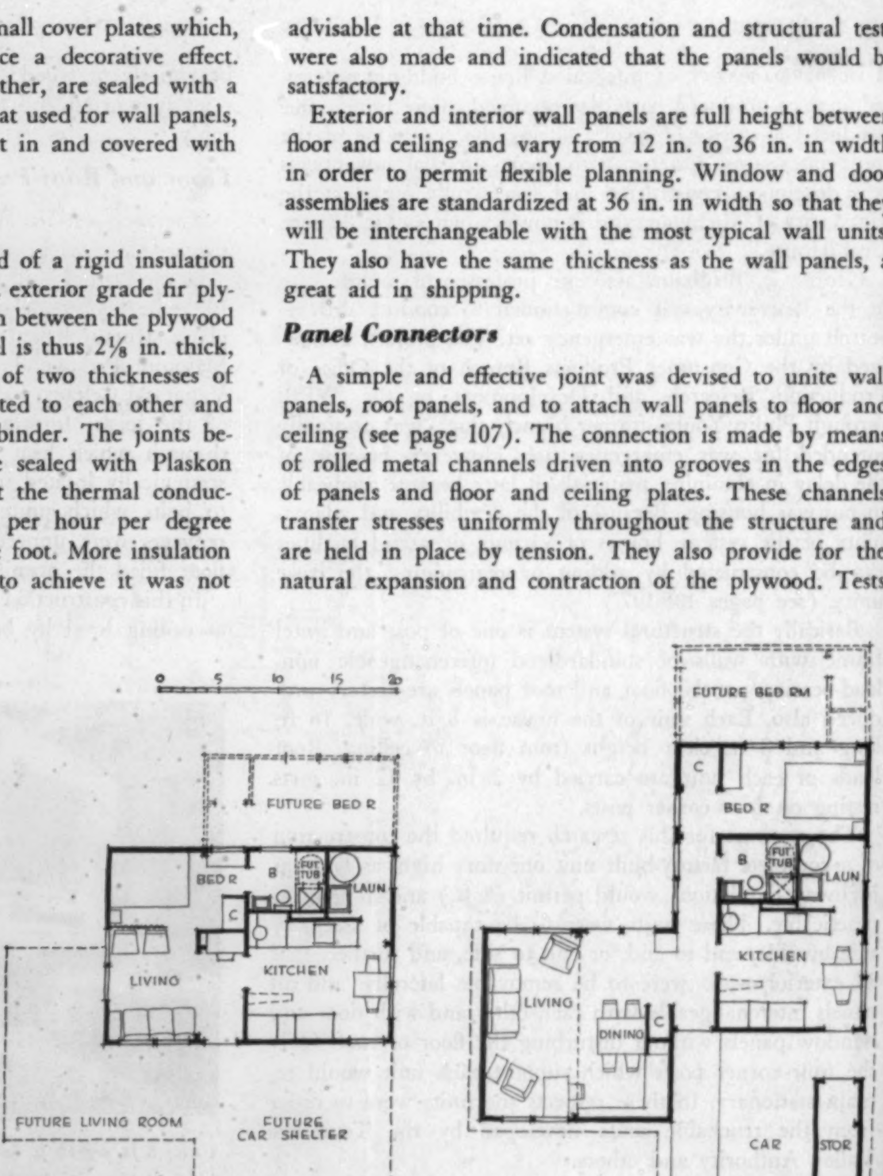
Wall Panel Construction

The basic wall panel is composed of a rigid insulation core faced on both sides with ¼ in. exterior grade fir plywood with a solid wood frame set in between the plywood facings on all four edges. The panel is thus 2⅛ in. thick, the insulating core being built-up of two thicknesses of 25/32 in. Vaporseal Celotex cemented to each other and to the plywood with an asphaltic binder. The joints between the plywood and frame are sealed with Plaskon Weldwood glue. Tests showed that the thermal conductivity of the panels was .17 Btu. per hour per degree difference in temperature per square foot. More insulation may be desired but further study to achieve it was not advisable at that time. Condensation and structural tests were also made and indicated that the panels would be satisfactory.

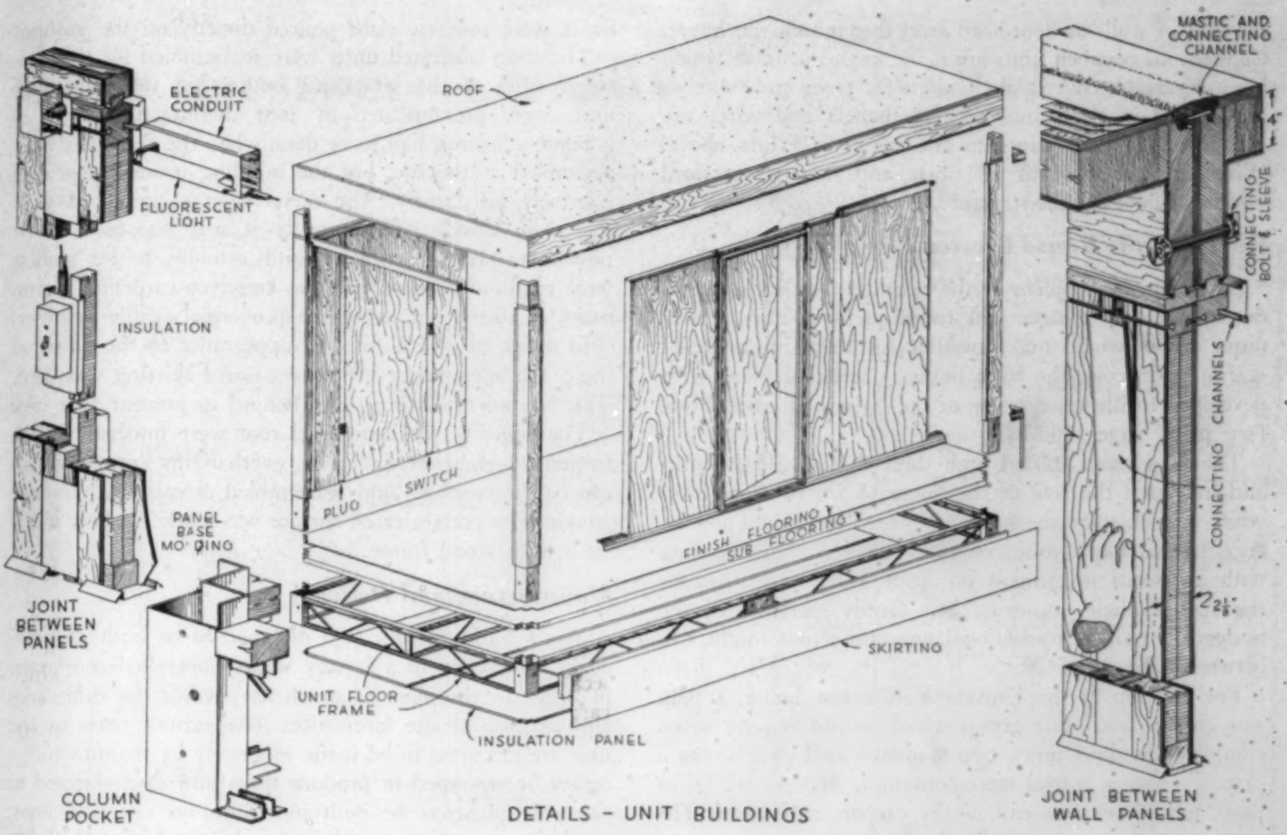
Exterior and interior wall panels are full height between floor and ceiling and vary from 12 in. to 36 in. in width in order to permit flexible planning. Window and door assemblies are standardized at 36 in. in width so that they will be interchangeable with the most typical wall units. They also have the same thickness as the wall panels, a great aid in shipping.

Panel Connectors

A simple and effective joint was devised to unite wall panels, roof panels, and to attach wall panels to floor and ceiling (see page 107). The connection is made by means of rolled metal channels driven into grooves in the edges of panels and floor and ceiling plates. These channels transfer stresses uniformly throughout the structure and are held in place by tension. They also provide for the natural expansion and contraction of the plywood. Tests

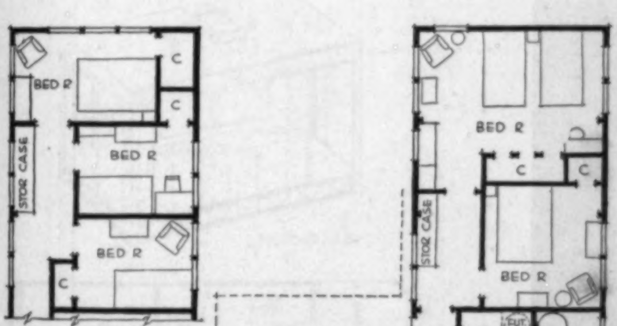


Typical planning possibilittes. Three units would make a minimal house for a young couple starting out. With one additional unit a separate bedroom and more closet space is possible. Five and six units might permit enough space for an average family. Two roof units may be added to form a car port. Seven unit house (opposite page) permits either two or three bedrooms. A standard roof unit forms covered rear terrace


MASTIC AND CONNECTING CHANNEL
4"
CONNECTING BOLT & SLEEVE
CONNECTING CHANNELS
2¼"
JOINT BETWEEN WALL PANELS
ROOF
ELECTRIC CONDUIT
FLUORESCENT LIGHT
INSULATION
SWITCH
PLUG
PANEL BASE MOLDING
JOINT BETWEEN PANELS
FINISH FLOORING
SUB FLOORING
SKIRTING
UNIT FLOOR FRAME
INSULATION PANEL
COLUMN POCKET
DETAILS - UNIT BUILDINGS

Patents Applied For

Structural details of the system. Open-web steel trusses used as joists proved more economical than stressed-skin wood construction for floor sections. This arrangement also permits use of space below floor for a large plenum chamber


BED R
C
C
STOR CASE
BED R
BED R
C
BED R
C
C
STOR CASE
BED R
B
FUT TUB
LAUN
ROOFED TERRACE
KITCHEN
LIVING
DINING
C
CAR
STOR

applied to this method of joining revealed great strength, the result of the continuous bearing of the metal channels on the wood panels.

In joints where the connection between metal and wood was perfected, the metal could be removed without damage, and reused. Two-, three- and four-way wall intersections are possible with these connectors and all walls can be assembled on a module line. It is also possible similarly to connect door or window panels combined with solid panels.

Utility Core

The utility unit in which is assembled all the heating and plumbing equipment, forms the nucleus of all plans. This unit includes a complete bathroom, a small laundry with wash trays, a hot water heater, a kitchen sink and cabinet and the furnace. The workspace for the kitchen is provided in an adjoining unit. In the floor is located all the rough plumbing of the house. Access to it is through a panel in the laundry floor where connections can be made with service lines from the street.

The furnace is so located that cold air can be drawn in at the floor line from the central passage of the house, circulated through filters, past the fire box and downward into the plenum chamber and on into the rooms. In effect, this procedure produces a type of panel heating, combined with forced warm air. A prefabricated chimney is located in the roof panel directly over the furnace.

Electrical control and switch boxes are located in the utility unit. Feed wires are run in wiremold conduits on the face of walls at door-head level throughout the house. Connections between units are made in this conduit which has a removable cover plate. Outlets for plugs and switches are located in the joints between panels and wires are run through these joints to the main feed line above. Wires are accessible at all times and may be serviced without damaging the structure.

Factory-Built House Erected

As the major problem in the research was not only the development of a structural technique, but also a technique which would make possible future additions to, or rearrangements of the basic house, a series of plans were developed to illustrate a few of the unlimited possibilities. (see plans pages 106-107.)

The plan series started with three 8 ft. by 16 ft. units and increased the size of the house to ten or more units while at each stage the house presented a finished appearance. In this way a young couple might start housekeeping with an initial investment of about $2,000, and increase the size of their house as their family increases or the budget allows. Each additional non-utility unit might cost between $350 and $450.

For erection at the University as a test house, a plan was chosen from this group which would require seven complete standard units, two standard roof panels, (as a carport) plus a special storeroom unit, 3 ft. by 12 ft. in plan, to support one end of the carport roof units. The seven-unit size included all the complications found in larger models and appeared to be representative of the building technique.

In preparation for the seven-unit house, post holes were dug to frost line and poured full of ready-mixed concrete from the delivery mixer. Exact levels and alignment of foundations were obtained by setting pre-cast concrete blocks on these posts. The entrance step and storeroom floors were concrete slabs poured directly on the ground.

The shop-fabricated units were reassembled for the bedroom wing of the seven-unit house, but the remaining units were prefabricated by four manufacturers.

Some adjusting had to be done when the materials were assembled at the site, but the building technique proved relatively satisfactory. The metal channel moldings gave the most trouble. Theoretically it was supposed to be possible to press them in by hand; actually, rubber mallets were required in most instances and even carpenter's hammers, at times, but never the proverbial sledge hammer.

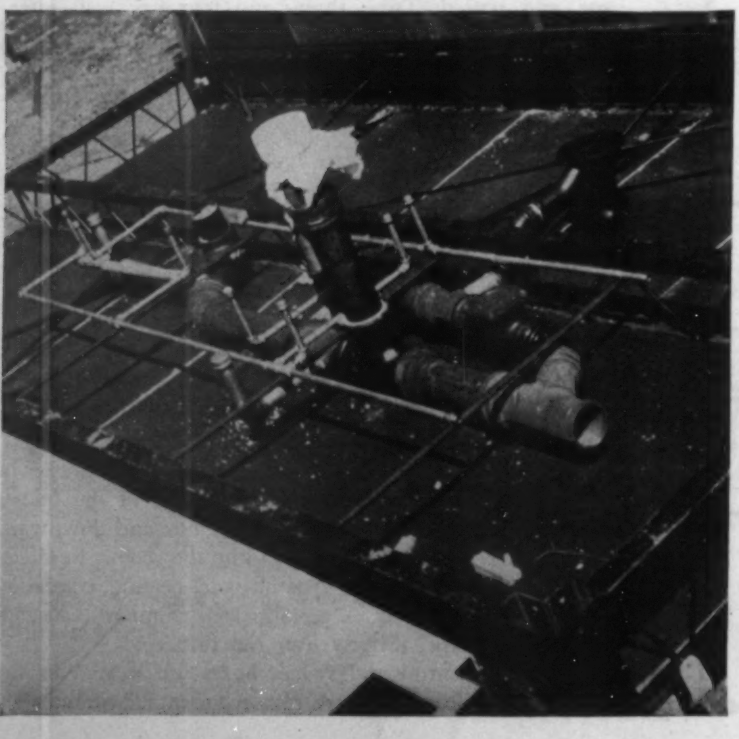
In order to give a finished appearance to the house at the grade line an asbestos cement board skirting was used. This has an insulating panel behind to prevent heat loss.

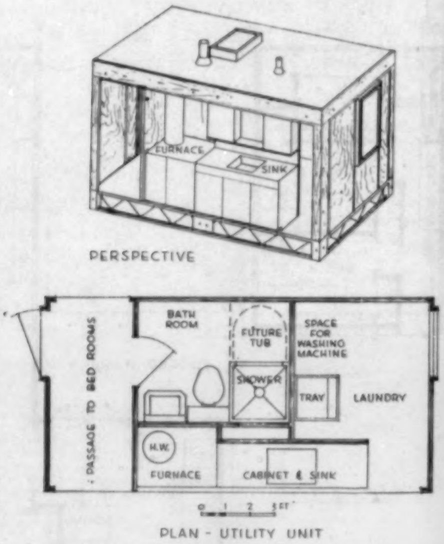
The edges of the dead level roof were finished with a sectional prefabricated, clip-on, overhanging cornice which can be disassembled and reassembled as easily as the wall panels. The prefabricated cornice was made of sheet metal on a light wood frame.

Manufacture and Delivery

Youtz building units are designed to be built and finished completely in a factory under controlled conditions in order to eliminate as much as possible the difficulties and expense of site fabrication. The various parts of the unit are designed to be made separately by manufacturers especially equipped to produce them and then shipped to assembly plants to be built into units on assembly lines.

The units are designed to be delivered directly from assembly plant to building site by truck and trailer. The handling of complete units is not difficult with proper equipment, because average units weigh only two and one-half tons and the utility unit not over three and one-half tons. Between main assembly plants located in large manufacturing centers and local plants, it is possible to pack the units flat.





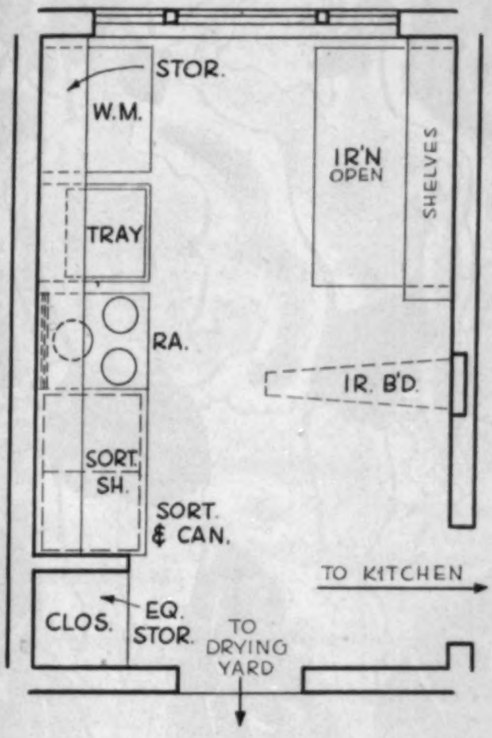
The utility core is the basic unit of all houses regardless of size. Having all plumbing connections in close proximity makes for economy in servicing and construction. An additional unit forms kitchen work space

THE HOUSEHOLD LAUNDRY

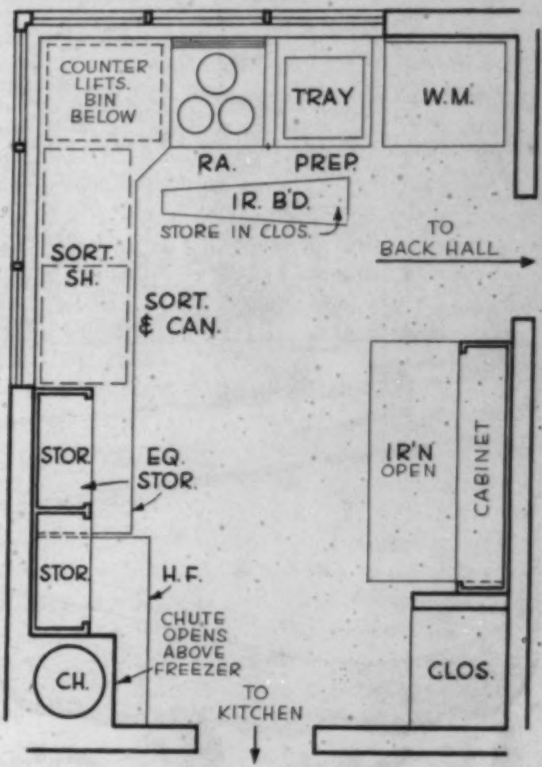
Multi-Use Laundry Rooms

Larch C. Renshaw, A.I.A.

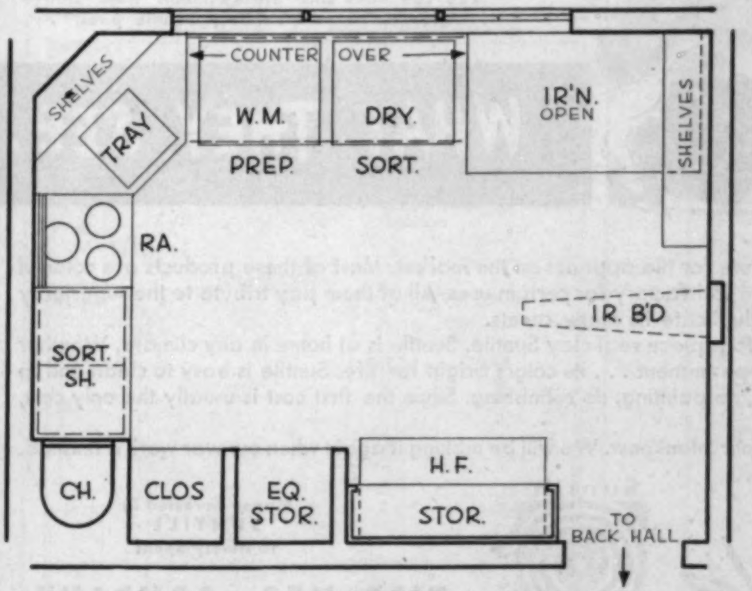
Scale ¼″ = 1′0″


STOR.
W.M.
TRAY
RA.
SORT.
SH.
SORT.
& CAN.
CLOS.
EQ.
STOR.
IR'N
OPEN
SHELVES
IR. B'D.
TO KITCHEN
TO
DRYING
YARD

I. MINIMUM
NO FREEZER, NO DRYER, NO CHUTE


COUNTER
LIFTS.
BIN
BELOW
TRAY
W.M.
RA.
PREP.
IR. B'D.
STORE IN CLOS.
TO
BACK HALL
SORT.
SH.
SORT.
& CAN.
STOR.
EQ.
STOR.
STOR.
H.F.
CHUTE
OPENS
ABOVE
FREEZER
CH.
IR'N
OPEN
CABINET
CLOS.
TO
KITCHEN

J. MEDIUM
NO DRYER


SHELVES
TRAY
COUNTER
OVER
W.M.
DRY.
PREP.
SORT.
IR'N.
OPEN
SHELVES
RA.
IR. B'D.
SORT.
SH.
CH.
CLOS
EQ.
STOR.
H.F.
STOR.
TO
BACK HALL

K. LARGER

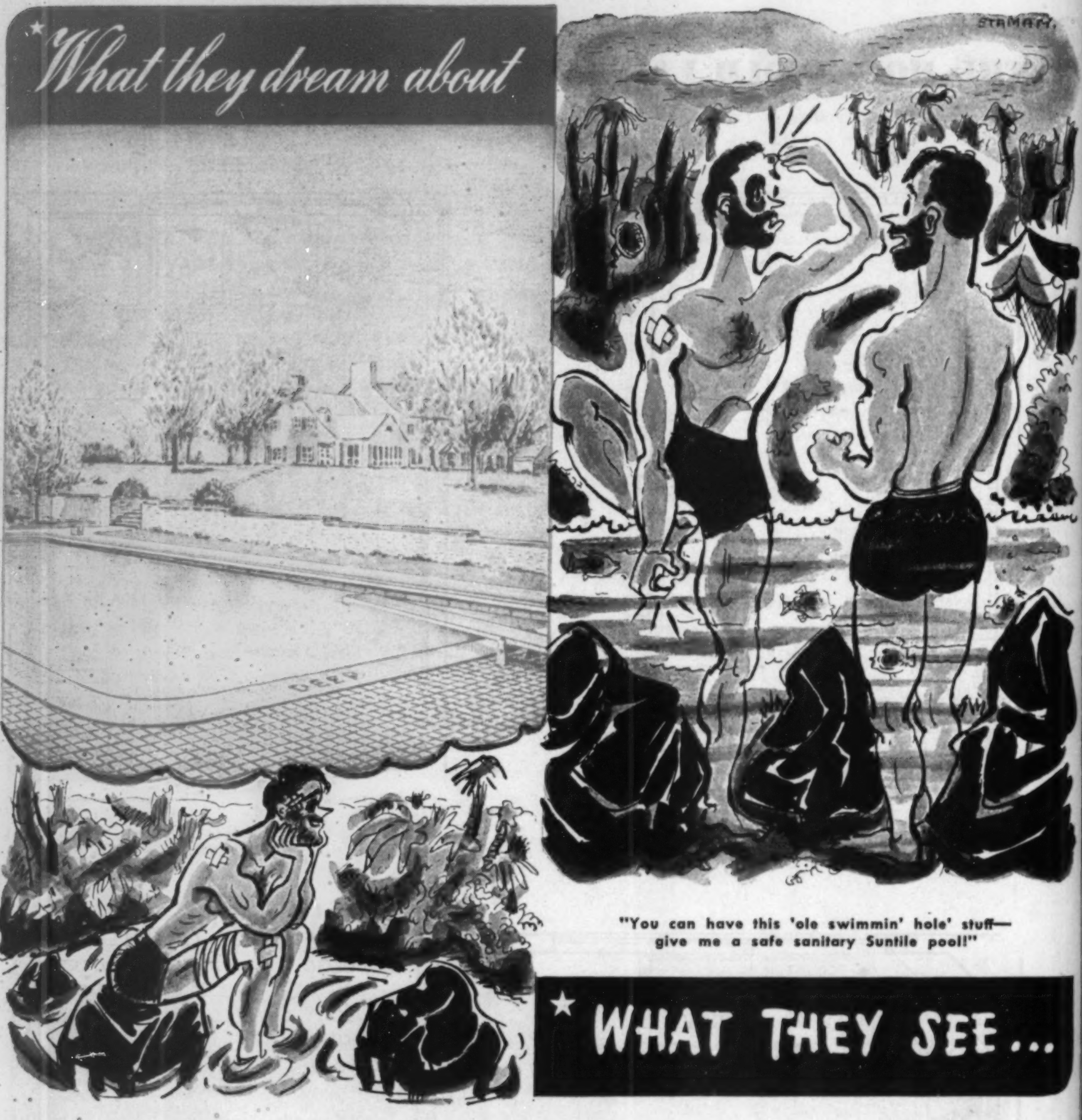
LAUNDRY - CANNING - FREEZING

KEY FOR LAUNDRY

CLOS.	STORAGE CLOSET
CH.	CLOTHES CHUTE
SORT. SH.	SORTING SHELF
TRAY	LAUNDRY TRAY
W. M.	WASHING MACHINE
DRY.	DRYER
IR'N	IRONER
IR. B'D	IRONING BOARD

KEY FOR CANNING - FREEZING

EQ. STOR.	CANNING EQUIPMENT STORAGE
SORT.	SORTING
PREP.	PREPARATION
RA.	RANGE (WITH COVER)
CAN.	CANNING & PACKAGING
H. F.	HOME FREEZER
STOR.	STORAGE FOR CANNED FOOD



"You can have this 'ole swimmin' hole' stuff—give me a safe sanitary Suntile pool!"

Every now and then another substitute for tile appears on the market. Most of these products are colorful and attractive. Some of them are quite satisfactory for certain uses. All of them pay tribute to the superiority and leadership of tile by trying to duplicate its many assets.

No substitute has ever been found to replace real clay Suntile. Suntile is at home in any climate. Whether it is used indoors or out, its beauty is permanent . . . its colors bright for life. Suntile is easy to clean and to keep clean . . . it requires no waxing, no painting, no refinishing. Since the first cost is usually the only cost, Suntile is a real economy.

Specify color-balanced Suntile in your plans now. We will be making it again when our war work is finished.

Suntile
Bright with color-Right for life

Money Invested In
SUNTILE
Is Wisely Spent

THE *Cambridge* TILE MFG. COMPANY
MEMBER OF THE PRODUCERS' COUNCIL

CINCINNATI 15, OHIO

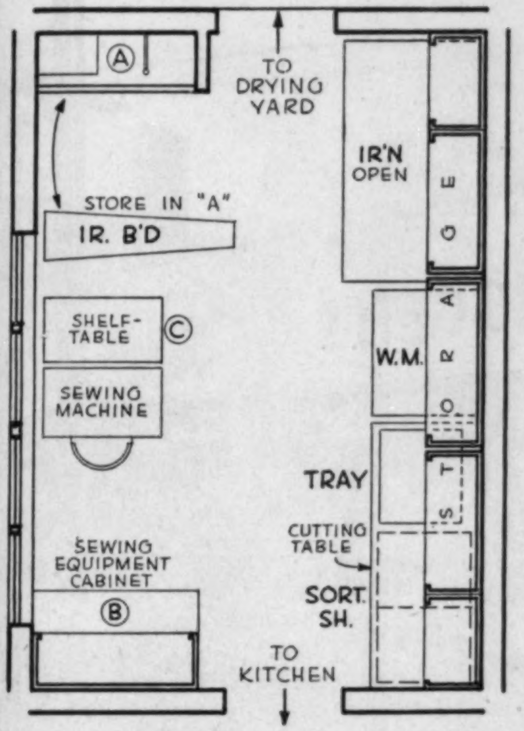
★ THIS SERIES IS BASED ON AN IDEA SUGGESTED IN LETTERS WRITTEN BY CPL. LOUIS A. PERKOVIC OF THE ARMY ENGINEERS IN THE SOUTH PACIFIC. PAPER, URGENTLY NEEDED TO MAKE OR WRAP OVER 700,000 ESSENTIAL WAR PRODUCTS, IS A NO. 1 WAR MATERIAL SHORTAGE. HELP SAVE PAPER.

THE HOUSEHOLD LAUNDRY

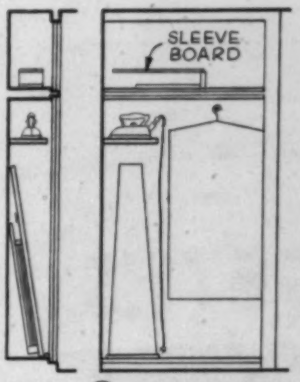
Multi-Use Laundry Rooms

Larch C. Renshaw, A.I.A.

Scale ¼" = 1'0"

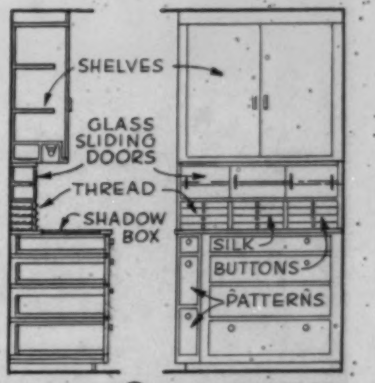

Ⓐ
TO DRYING YARD
STORE IN "A"
IR. B'D
SHELF-TABLE Ⓒ
SEWING MACHINE
SEWING EQUIPMENT CABINET
Ⓑ
IR'N OPEN
STORAGE
W.M.
TRAY
CUTTING TABLE
SORT. SH.
TO KITCHEN

L. WALK-THROUGH
LAUNDRY-SEWING-MENDING


SLEEVE BOARD

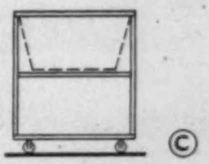
SEC. Ⓐ ELEVATION

WASH BOARD MAY BE HUNG ON THE INSIDE OF ONE DOOR


SHELVES
GLASS SLIDING DOORS
THREAD
SHADOW BOX
SILK
BUTTONS
PATTERNS

SEC. Ⓑ ELEVATION

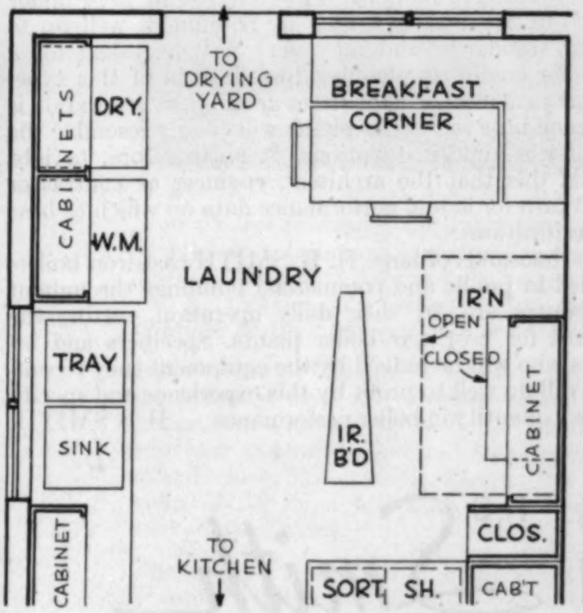
WALL AND BASE CABINETS ARE STOCK TYPES WITH SHADOW BOX ADDED. IF SPECIALLY BUILT, CAN BE PORTABLE.



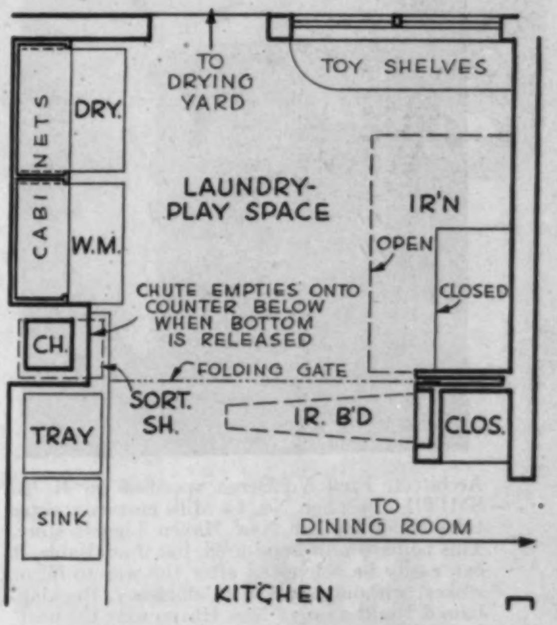
UNIT MAY CARRY CLOTHES BASKET IF TOP SHELF IS REMOVED.

KEY

CLOS.	STORAGE CLOSET
CH.	CLOTHES CHUTE
SORT. SH.	SORTING SHELF
TRAY	LAUNDRY TRAY
W.M.	WASHING MACHINE
DRY.	DRYER
IR'N	IRONER
IR. B'D	IRONING BOARD


TO DRYING YARD
BREAKFAST CORNER
CABINETS
DRY.
W.M.
LAUNDRY
TRAY
SINK
CABINET
IR'N
OPEN
CLOSED
IR. B'D
CABINET
CLOS.
TO KITCHEN
SORT. SH.
CAB'T

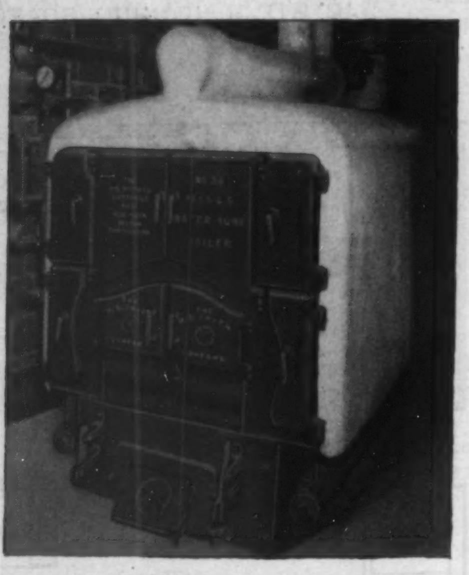
M. AT ONE END OF KITCHEN
LAUNDRY-BREAKFAST CORNER


TO DRYING YARD
TOY SHELVES
CABINETS
DRY.
W.M.
LAUNDRY-PLAY SPACE
IR'N
OPEN
CLOSED
CHUTE EMPTIES ONTO COUNTER BELOW WHEN BOTTOM IS RELEASED
CH.
FOLDING GATE
SORT. SH.
IR. B'D
CLOS.
TRAY
SINK
TO DINING ROOM
KITCHEN

N. ALTERNATIVE USE
LAUNDRY-PLAY SPACE

Boiler Plant . . . FOR THE POST-WAR COMMERCIAL BUILDING

YORK ST
DRUGS
LIGGETT'S
LIGGETT'S
Rexall
DRUGS
SODA
DRUGS
SODA
Liggetts
Rexall
DRUGS
Liggetts
Rexall
Liggett



Architect, Fred VonBeren specified an H. B. SMITH 11 section No. 34 Mills cast-iron water tube boiler for the New Haven Liggett store. This boiler is now hand-fired, but if advisable, it can easily be converted after the war to oil or stoker, without any loss in efficiency. Buckingham & Routhe Co. of New Haven were the heating contractors.

THE best in war time commercial construction is well exemplified by the new Liggett Drug Co. store in New Haven, Conn.

This attractive building, while erected in 1944 under W.P.B. restrictions, is heated by equipment well up to pre-war standards, and may very well be taken for a model for engineers planning installations of this type. It is our prediction that as far as actual heat generation is concerned post war boiler plants will closely resemble the best of war time installations. It is, therefore, to jobs such as this that the architect, engineer or contractor should turn for actual performance data on which to base his specifications.

The thousands of large H. B. SMITH cast-iron boilers installed in public and commercial buildings throughout the country are, by their daily operation, setting the standard for post war boiler plants. Specifiers and installers who will be judged by the equipment they recommend will do well to profit by this experience and specify a known quantity in boiler performance . . . H. B. SMITH.

H.B. Smith
CAST-IRON BOILERS

THE H. B. SMITH COMPANY, INCORPORATED • WESTFIELD, MASSACHUSETTS

Branch Offices and Sales Representatives in Principal Cities.

★ ★ ★ ASBESTOS IN ACTION

Oyez! Oyez! Oyez!

★ ★ ★ **K & M SPRAYED "LIMPET"**
solves another acoustical problem

You are free to express the quiet dignity of a court room, or the beauty of a fashionable cocktail lounge, when you use K&M Sprayed "Limpet" Asbestos. This amazingly adaptable material can be sprayed on a ceiling to any thickness and will readily conform to the most intricate architectural design.

K&M Sprayed "Limpet" Asbestos not only *absorbs* sound by its porosity, but also reduces unwanted noise through diaphragmatic action. It is light, strong and extremely fire-resistant and can be painted repeatedly without destroying its effectiveness. For example, Limpet has a noise reduction coefficient of .70 for a 3/4" thickness . . . even after application of two coats of paint.

The low cost per unit of sound absorption makes K&M Sprayed "Limpet" Asbestos economical to use. Its low thermal conductivity (.31 at 75°F) is a *Plus Value* which is especially desirable for insulation reasons. Write for further details.

ARMY E NAVY
K&M
best in asbestos

KEASBEY & MATTISON
COMPANY, AMBLER, PENNSYLVANIA

REQUIRED READING

THE SMALL HOUSE OF TOMORROW

By Paul R. Williams, A.I.A. Hollywood 28, Calif.; Murray & Gee, Inc., 1945. 8½ by 11 in. 95 pp. illus. Paper, $2.00; cloth, $3.00.

Chiefly this is a portfolio of 37 house plans by Mr. Williams, Paul Thiry, Joseph R. Kelly and Richard Neutra. They range in style from the more or less conventional to the ultra modern, and in size from the very small to the fairly large. Each plan is accompanied by an elevation and a few paragraphs of description. All have some provision for outdoor living—a terrace, in most cases, or a patio; most are low and open-planned; and most are definitely Californian or semi-tropical in character.

In addition to the house plans there is a detailed plan each of the "bathroom of tomorrow" and the "kitchen of tomorrow," and a garden plan. A brief introduction stresses the need for an architect in home building and lists some Do's and Don't's for the prospective home owner. And finally there is an "Architect's Notebook" describing expected postwar developments.

In view of the too-great stress already laid upon the "miracle house" of tomorrow, Mr. Williams might perhaps have been more sensible to omit in his list of postwar expectations such items as the electronic stove which will cook a roast in less than five minutes, but on the whole his notebook is a sound resumé of what to look for. It includes the new plastic insulating materials, the Precipitron air conditioner, the small heating units, etc.

BUILDING OR BUYING A HOME

By B. K. Johnstone & Associates. New York 18 (330 W. 42nd St.), Whittlesey House, 1945, 7¼ by 10 in. xi + 154 pp. illus. $2.75.

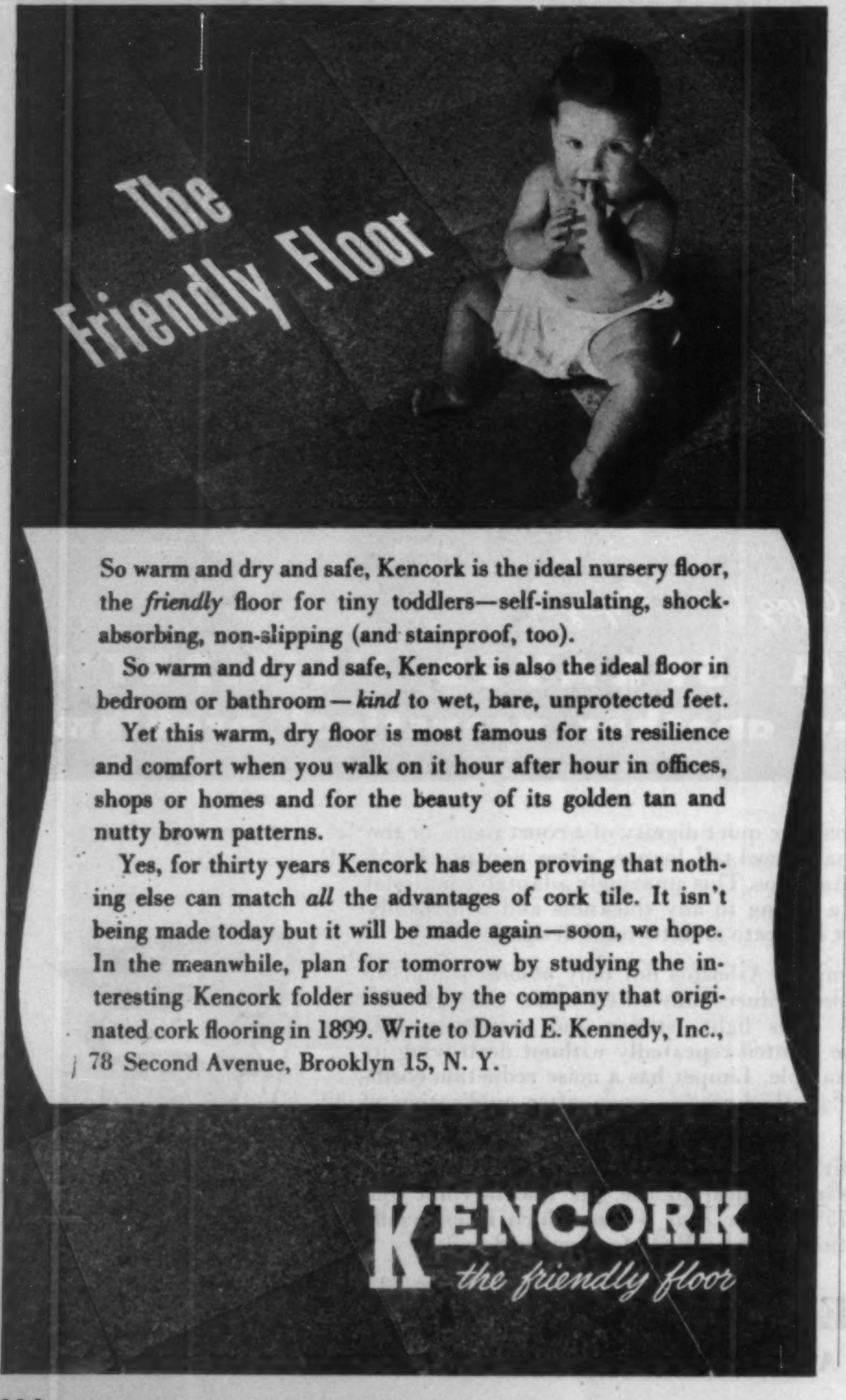
Here is a thoughtful, clear and exceptionally complete manual for the prospective home owner. Unlike Dr. John P. Dean, whose book querying the soundness of home ownership is reviewed below, Prof. Johnstone does not especially emphasize the risks of home ownership, but he makes them thoroughly clear nonetheless. He is far more constructive (no pun intended) than Dr. Dean. Starting with the first hurdle — the financing — he works steadily through from site selection and preliminary planning to actual construction. He is liberal with his diagrams, to make his points doubly clear. He leaves nothing to the imagination, takes nothing for granted.

In the chapter on financing, for example, Prof. Johnstone does not content himself with a mere discussion of the problems involved. He delves down deep into the whole situation, explains exactly what a mortgage is, the different types of mortgage available, the moral risk assumed, and the bugaboo of foreclosure. As in the rest of the book, the technical terms in common usage are printed in boldface for accentuation, and are simply defined—such terms as appraisal value, amortized mortgage, satisfaction piece.

The discussion of site selection is similarly thorough. It takes up choice of neighborhood, zoning, nuisances (smoke, noise, odors, traffic, etc.), improvements (water, lighting, paving), drainage, service, topography, restrictions. It even explains the terms of agreement for the purchase of the site, the title search, and the requirements of the deed.

The chapter on planning is enlivened by numerous clever sketches showing Mrs. Average Housewife going about her day's work. The best in modern planning is here made vivid,

(Continued on page 128)



So warm and dry and safe, Kencork is the ideal nursery floor, the *friendly* floor for tiny toddlers—self-insulating, shock-absorbing, non-slipping (and stainproof, too).

So warm and dry and safe, Kencork is also the ideal floor in bedroom or bathroom — *kind* to wet, bare, unprotected feet.

Yet this warm, dry floor is most famous for its resilience and comfort when you walk on it hour after hour in offices, shops or homes and for the beauty of its golden tan and nutty brown patterns.

Yes, for thirty years Kencork has been proving that nothing else can match *all* the advantages of cork tile. It isn't being made today but it will be made again—soon, we hope. In the meanwhile, plan for tomorrow by studying the interesting Kencork folder issued by the company that originated cork flooring in 1899. Write to David E. Kennedy, Inc., 78 Second Avenue, Brooklyn 15, N. Y.

KENCORK
the friendly floor

They didnt know whether to eat it or wear it !

When Laytex-insulated wire first reached New Guinea, the natives were puzzled about its purpose. So were the inhabitants of other lands—from the Solomons to Mongolia.

For Laytex has gone into many, many regions where no wire had ever gone before. Under arctic cold, steaming tropic heat, the shattering shock of heavy explosions, Laytex performs better than was ever expected of any wire.

The entire output of Laytex Wires and Cables goes to fill the needs of war. But in a not-too-distant future the advantages of Laytex will be available for a long list of important home services... Buildings, Police and Fire Alarms, Communications, Signalling, Power, Control, and many more.

Rubber Insulation at Its Best

U.S. Laytex

ELECTRICAL
WIRES AND CABLES

Serving Through Science

UNITED STATES RUBBER COMPANY

1230 SIXTH AVENUE, ROCKEFELLER CENTER, NEW YORK 20, N. Y. • *In Canada:* DOMINION RUBBER CO., LTD.

FOR BETTER BUILDING

(Continued from page 20)

Supplied in white only, can be tinted with limeproof oil colors. The Wilbur & Williams Paint Corp., 33 St. James Ave., Boston 16, Mass.

HEATERS AVAILABLE

Now that copper has again been made available for unit heaters, Grinnell Co., Inc., Providence 1, R. I., has resumed production of its *Thermolier* unit heater, with copper tubes.

Among the features of the Thermolier is the patented internal cooling leg in which condensate cooling is said to be so efficient that a simple thermostatic trap can be used. Also featured are built-in expansion and built-in drainage.

A supplementary device is the Grinnell Duotherm Control which automatically maintains a high temperature when required and a low temperature during idle hours throughout the plant.

FLOOR FINISHES

For Wooden Floors

A quick-drying, waterproof and wear resistant floor finish, *Heavy Duty Penetrating Floor Seal,* is said to have unusually good penetrative power. Especially developed to stand up under the hard wear given floors in war housing projects, the new coating is made with the manufacturer's patented Thermolyzed Oils. It is said to dry in an hour, to be applicable to any type of wood floor, new or resanded. O'Brien Varnish Co., South Bend, Ind.

For Concrete Floors

A patented chemical concrete floor hardener, *Lapidolith Liquid,* is said not only to wearproof and dustproof concrete floors, but to make the floors highly impermeable to many oils, chemicals and acids. Can be applied to old floors without interrupting work. Said to be permanent, requiring only one treatment. L. Sonneborn Sons, Inc., 88 Lexington Ave., New York 16.

STANDARDS

Prefabricated Homes

Printed copies of Commercial Standard CS125-45, Prefabricated Homes (see AR, April, 1945, p. 24) are now available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., at 5 cents each.

Asphalt Roofing

A proposed Simplified Practice Recommendation for Asphalt and Tarred Roll Roofing and Saturated Felt Products has been submitted to producers, distributors and users of these products for approval or comment, according to an announcement of the Division of Simplified Practice, National Bureau of Standards.

The proposed recommendation covers smooth and mineral surfaced roll roofing, roll siding and saturated felt only. If approved, it will become effective on a voluntary basis when wartime restrictions are removed.

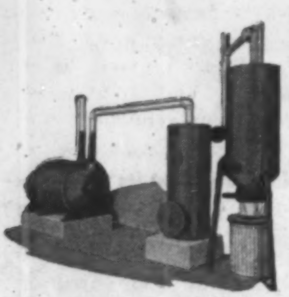
Mimeographed copies of the recommendation may be obtained from the Division of Simplified Practice, National Bureau of Standards, Washington 25, D. C.

Safety Color Code

Basis of the standard safety color code proposed for national use by the American Standards Association is the safety system now in use in Quartermaster and Army Service Forces Depots.

Red, green, yellow, white and black, and combinations thereof are the colors

(Continued on page 118)



"PAY DIRT" IN SCHOOLS

Dirt and dust can be very expensive if not promptly removed. It endangers health, destroys books, decorations and equipment and lowers the morale of the students.

The real "Pay dirt" is that extra ounce or pound that is extracted every day with the Spencer Central Cleaning System.

It saves time, gets more of the dirt, and because it lasts a lifetime with low maintenance, it costs less in the long run.

Also cleans chalk trays, gymnasiums, radiators, boilers, filters, projectors and a dozen other hard-to-clean spots quickly and easily.

Leading architects and educators endorse it. Ask for the Bulletins.

The vacuum producer and dirt container are located in the basement. Piping connects to convenient inlets all over the building.

SPENCER VACUUM CLEANING
HARTFORD

THE SPENCER TURBINE COMPANY, HARTFORD 6, CONN.

256E

"A 'MUST' FOR MASS-FEEDING PLANNERS...

Your Case Histories of Successful Mass-Feeding Operations."

(FROM A LETTER IN THE BLODGETT FILES)

KITCHEN PLAN NO. 25:

Twenty-fifth of a series of successful mass-feeding Kitchen plans

This is the kitchen plan recommended for a famous western hotel, to replace an outmoded presently operating kitchen. Designed to serve 15,000 persons daily, it is compact, speedy, and space and labor saving. All essential kitchen-functions are incorporated within the kitchen area.

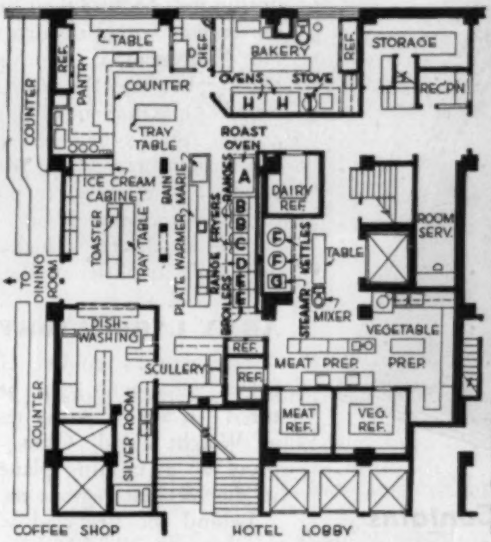


TABLE
REF.
PANTRY
CHEF
BAKERY
REF.
STORAGE
COUNTER
COUNTER
OVENS
STOVE
H
H
RECPN
TRAY TABLE
ROAST OVEN
ICE CREAM CABINET
BAIN MARIE
A
DAIRY REF.
TOASTER
TRAY TABLE
PLATE WARMER
RANGE
FRYERS
RANGES
B
B
C
D
E
E
F
F
G
KETTLES
TABLE
ROOM SERV.
TO DINING ROOM
BROILERS
STEAMR
MIXER
DISH-WASHING
VEGETABLE
REF.
MEAT PREP.
PREP.
SCULLERY
REF.
COUNTER
SILVER ROOM
MEAT REF.
VEG. REF.
COFFEE SHOP
HOTEL
LOBBY

Designed by: John Cini, Kitchen Equipment Consultant, Nathan Straus-Duparquet, Inc., New York, N. Y.

COOKING EQUIPMENT USED:

(a) 1 No. 952 BLODGETT GAS-FIRED ROASTING OVEN
(b) 2 hot-top skeleton ranges
(c) 2 gas-fired deep fat fryers
(d) 1 hot-top range
(e) 2 hotel ceramic broilers
(f) 2 stock kettles
(g) 1 vegetable steamer
(h) 2 No. 982 BLODGETT GAS-FIRED BAKING OVENS
(i) 1 confectionery furnace

CONSULT YOUR
FOOD SERVICE
EQUIPMENT DEALER

THE NO. 952 BLODGETT GAS-FIRED ROASTING OVEN in this installation serves the dual purpose of providing large capacity in a limited space, and of making the kitchen work easier by removing oven work from beneath the ranges. THE TWO NO. 982 BLODGETT BAKING OVENS in the bakery provide the utmost in flexible area—16-pan baking capacity in four separately controlled baking sections. For details and specifications of BLODGETT OVENS consult your equipment house or write

The G. S. BLODGETT CO., Inc.
53 Maple Street **Burlington, Vermont**

Reprints of this new series will soon be available to architects on request.

For the third consecutive year, The G. S. Blodgett Co. presents through the pages of Architectural Record a new series of mass-feeding kitchen layouts which have proved their practical value in actual operation.

Modern kitchen design calls for:

1. **The services of an experienced kitchen engineer.**
2. **"Specialized Cooking Tools," such as the Blodgett Roasting and Baking Ovens used in the installations illustrated in this series.**

These installations have been selected not only because of the presence of one or more Blodgett Ovens, but because of established efficiency and economy of operation in each case.

Since the "heart" of a successful kitchen layout is its roasting and baking equipment, the success of these layouts is ample evidence of the merits of the equipment selected.

To make this data available to anyone concerned with designing and planning mass-feeding operations, The G. S. Blodgett Co. offers the series in reprint form, entitled "Case Histories of Successful Mass Feeding Operations," a second edition of which will be issued in the early future.

We shall be glad to add your name to the list of those desirous of receiving this second edition of "Case Histories."

KEEP THIS FOR HANDY REFERENCE

FOR BETTER BUILDING

(Continued from page 116)

used. Red identifies fire protection equipment and danger and stop signals. Green is the basic color for designating safety—the location of first aid equipment, dispensaries, stretchers, gas masks and safety starting buttons. Yellow indicates the need for caution and marks physical hazards such as obstacles which may cause stumbling. Black, white, or a combination of the two are the basic colors for designating housekeeping, sanitation and traffic markings. Solid black, solid white, or either striped or checker combinations are recommended for direction signs, corners, passageways, stairways, dead ends, traffic guides and refuse cans.

NAVY TESTING CHAMBER

In the middle of the noisy and bustling U. S. Navy Yard, Brooklyn, N. Y., there is a room so completely soundproof that it approaches the quiet of the stratosphere. In it a man can hear his own heartbeat. Designed by engineers of the Navy Yard's Material Laboratory, it is used for the testing of radio and electronic equipment.

To exclude all vibration, the room is mounted on columns of rubber especially developed and installed by engineers of the U. S. Rubber Company. There are 14 of these mountings, each 16 in. in height, and they are the only contact between the room and the outside world.

The room measures 18 by 30 ft. and weighs 8 tons. It is lined with deep layers of spun glass and other acoustical material which absorb sound and make it airtight. The walls are made nonparallel because sound reflection is less pronounced in an asymmetrical room than in a perfectly square one.

Built around the outside of the chamber is a second room with brick walls 12 in. thick and a concrete floor 6 in. thick. It is equipped with a steel door weighing 3,000 lb. and mounted on roller bearings. This outside room stops many extraneous noises before they reach the inner chamber.

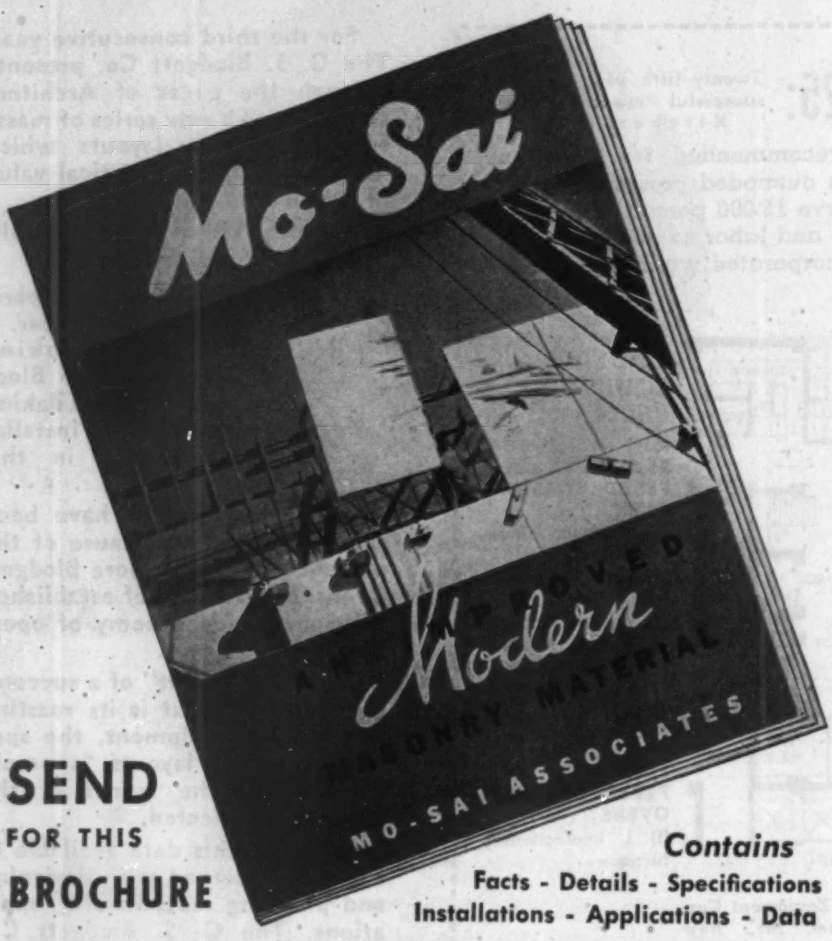
People are excluded from the room during tests because their breathing and movements would disturb the stillness. All equipment is removed except a loudspeaker and the instrument being tested. Operators outside regulate the volume, pitch and other characteristics of the sound emanating from the loudspeaker. The sound is picked up by telephone or microphone and carried outside to devices which tell the reproductive qualities of the instrument.

ARMY LABORATORY

The world's coldest climate—110° below zero—will soon be "manufactured" in a new Army test laboratory at Wright Field, Ohio, to weatherproof U. S. fighting planes for action in the bleakest regions on earth.

Behind the steel-clad walls of four massive chambers, Army research men can freeze solid a drum of ordinary gasoline, or test the ability of high powered aircraft engines to start on a sub-arctic morning, according to research engineers of the York Corporation, York, Pa., who designed and built the refrigeration equipment. Two of the smaller chambers are about the size of a spacious living room with a 12-ft. ceiling, and the largest two cold rooms are 36 ft. long and 16 ft. wide.

A stream of chilled air pouring off cooling coils at 130° below zero for 16 hours is required to drop the temperature in the chambers low enough for each critical test. The chambers make use of all three types of refrigeration compressors. There are three centrifugal units, six reciprocating units and one rotary machine operating on two systems of 70 and 30 tons each.


Mo-Sai
An Approved Modern Masonry Material
Mo-Sai Associates

SEND FOR THIS BROCHURE

Contains
Facts - Details - Specifications
Installations - Applications - Data

Write Nearest Manufacturer

***Mo-Sai* ARCHITECTURAL SLABS**

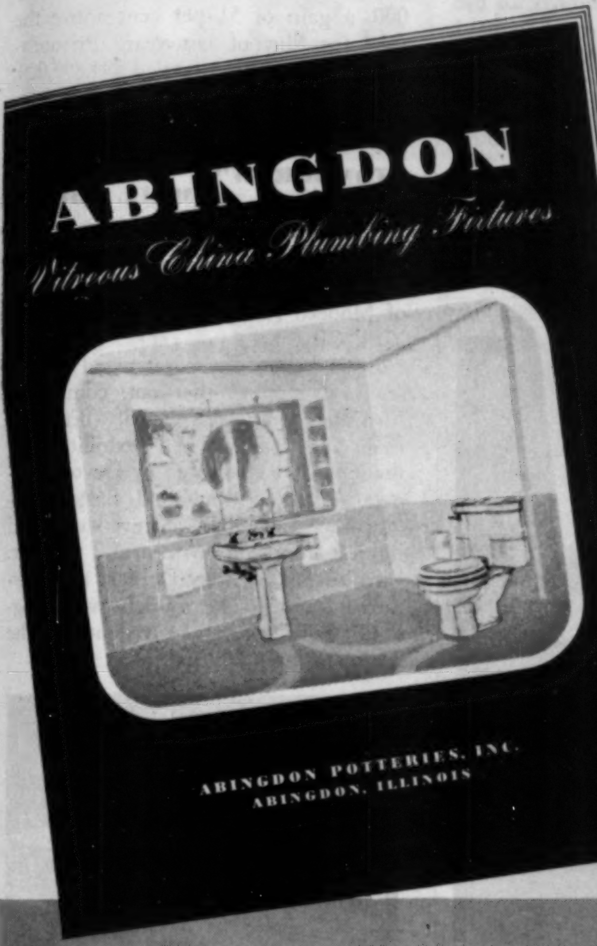
The modern masonry facing slab. For new and old buildings. 2 inches thin. Exposed aggregate finish. Large slabs, up to 100 sq. ft. and more. Colorful — Decorative — *Modern as Tomorrow.*

MO-SAI ASSOCIATES

New Haven, Conn...............The Dextone Company.....................P. O. Box 606
Boston, Mass............Cambridge Cement Stone Company..........156 Lincoln St.
Philadelphia, Pa..........Formigli Arch'l Stone Company..........R. E. Trust Bldg.
Richmond, Va...............Economy Cast Stone Company............P. O. Box 1223
Greensboro, N. C...........Arnold Stone Company, Inc................P. O. Box 477
Oshkosh, Wisc...................Badger Concrete Company.................191 Marion St.
Salt Lake City, Utah.......Otto Buehner & Company.......640 Wilmington Ave.

MO-SAI ASSOCIATES, founded to standardize and improve architectural slabs. The trade mark "Mo-Sai" Reg. U.S. Pat. Off. is the property of the Dextone Co.

Filed in SWEETS for your Convenience!


ABINGDON

Vitreous China Plumbing Fixtures

ABINGDON POTTERIES, INC.
ABINGDON, ILLINOIS

Specify
ABINGDON
PLUMBING FIXTURES
FOR HOMES AND INDUSTRY

Abingdon offers a wide selection of lavatories, water closets, urinals, sinks, drinking fountains and bathroom accessories that are sure to please the most discriminating client.

Every Abingdon fixture embodies the latest in design, finest fittings plus sturdy construction for long years of trouble-free service.

For nearly 40 years the name Abingdon has stood for vitreous china plumbing fixtures of outstanding merit—outstanding design, construction and operation.

Before you specify any type of plumbing fixture consult the Abingdon catalog in Sweets.

ABINGDON POTTERIES INC.

Abingdon *Illinois*

SALES REPRESENTATIVES IN ALL LEADING CITIES impermeable and warm enough to be above the dew point of the interior atmosphere.

3. To make the outer wall structure slightly permeable to water vapor.

◆ ◆ ◆

CONSTRUCTION GAINS

Construction activity in the 37 states east of the Rocky Mountains showed sharp gains in May, F. W. Dodge Corporation reports. Contracts awarded called for an outlay of $242,523,000, which was 68 per cent more than in May of last year. Total contracts for the first five months of this year amounted to $1,255,101,000, a gain of 57 per cent over the corresponding period of 1944.

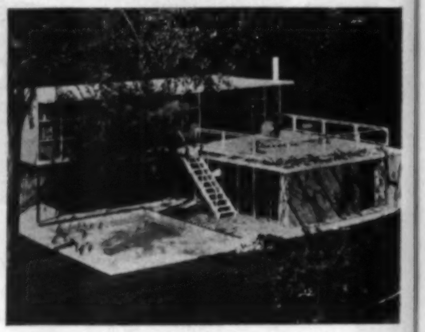
Nonresidential building in May was up 62 per cent over last year, residential construction gained 36 per cent, and heavy engineering construction, comprising public works and utilities, was up 93 per cent. The most significant gain in May was in residential construction, which trailed last year's volume in each of the preceding four months of this year.

Publicly-owned construction contracts in May amounted to $147,626,000, a gain of 51 per cent above the total for May of last year. Privately-owned construction totaled $94,897,000, a gain of 105 per cent over the corresponding month of the previous year.

"TOMORROW'S SMALL HOUSE"

Lively public interest is being shown in the "Tomorrow's Small House" exhibit currently on view at the Museum of Modern Art, 11 W. 53rd St., New York City.

Eight beautifully constructed models scaled 1 inch to the foot, completely furnished and landscaped, form the main portion of the exhibit. The models—some executed by Devon Dennett, others by Raymond Barger Studios—are installed at eye-level and lighted from both within and without. Furniture is by Betty DeMars and Raymond Barger. The models were originally built for, and are lent by, the *Ladies' Home Journal.*



The upper and lower floors form a right angle in this small house by Carl Koch

Architects for the eight houses are Frank Lloyd Wright, Vernon DeMars, George Fred Keck, Carl Koch, Hugh Stubbins, Mario Corbett, Philip Johnson, and Plan-Tech Associates. As would be expected from such a group, all the houses shown are definitely modern in style, with flat roofs, free use of glass, and plenty of provision for "outdoor living." All have heated concrete floor-slab instead of a cellar, and all but that of Frank Lloyd Wright are designed to make use of factory fabricated panels and prefabricated kitchen, bathroom and fireplace units. All but two are one story in height.

Planning highlights: Vernon DeMars' conception of the row house, with individuality and privacy secured by projecting party walls and a staggered building line; every room with its own redwood paved terrace in Mario Corbett's California house, elabo-

(Continued on page 122)

BARBER-COLMAN

28 SHOP
MARSHALL FIELD & COMPANY
CHICAGO

Marshall Field & Company, famous Chicago store, designed their 28 Shop as a luxury setting for the sale of the best lines of women's apparel. For maximum patron comfort they included a good air conditioning system with Venturi-Flo ceiling outlets (seen on the overhead circular light soffit) for uniform draftless air distribution. Favorable comment of many customers is fair testimony of the success of this installation.
Photo Hedrich-Blessing Studio.

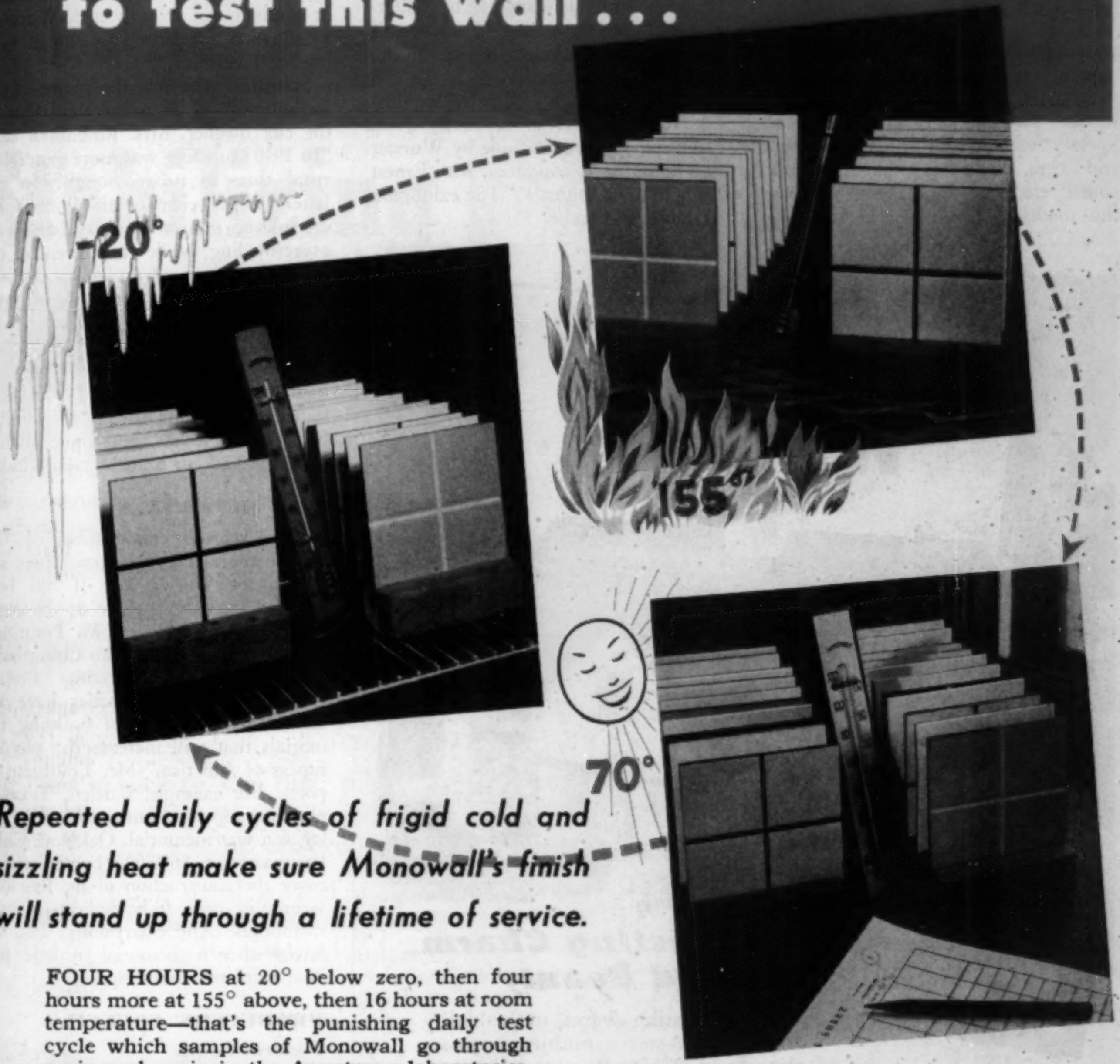
Venturi-flo

CEILING OUTLETS
FOR GUARANTEED
AIR DISTRIBUTION

Data based on complete tests enable us to recommend exactly the right outlet for any condition and GUARANTEE results. You are assured of uniform, properly diffused air of the desired temperature at specified level, with required air movement and elimination of hot, cold, or drafty areas. Use ENGINEERED AIR DISTRIBUTION — see your Barber-Colman representative.

BARBER-COLMAN COMPANY
1232 ROCK STREET • ROCKFORD, ILLINOIS

Years are crowded into days to test this wall . . .



Repeated daily cycles of frigid cold and sizzling heat make sure Monowall's finish will stand up through a lifetime of service.

FOUR HOURS at 20° below zero, then four hours more at 155° above, then 16 hours at room temperature—that's the punishing daily test cycle which samples of Monowall go through again and again in the Armstrong laboratories. Its finish must resist temperature changes far in excess of normal conditions. And this is just one of many torture tests Monowall must withstand before it's approved for sale. That's why, when you recommend Monowall, you know it's still prewar quality.

Wherever you plan on bright, clean wall and ceiling surfaces—in kitchens, bathrooms, hallways, commercial interiors—Monowall is a practical material to use. Monowall is durable—easy to clean and keep clean. Its brilliant colors, in gleaming plain or scored tile-designs, fit well into modern decorative treatments.

The large lightweight panels of Monowall go up fast, require neither special preparation nor finishing. One man can Monowall the average room in a single day.

Write today for free samples of Monowall and illustrated literature. Armstrong Cork Company, Building Materials Division, 2407 Lincoln Street, Lancaster, Penna.

ARMSTRONG'S MONOWALL

MADE BY THE MAKERS OF TEMLOK INSULATION—SHEATHING, LATH, DE LUXE INTERIOR FINISH

THE RECORD REPORTS

(Continued from page 120)

rately landscaped by Garrett Eckbo; Carl Koch's plan with upper and lower floors defined as separate blocks, forming a right angle.

The exhibition also includes a model of a typical neighborhood section, including apartment houses, garages, parking space, a supermarket, shops, service station, library, auditorium, nursery school, workshop, restaurant and club, swimming pools, tennis courts, etc. The original site plan for this model is by Vernon DeMars, developed by Serge Chermayeff and Susanne Wasson-Tucker, with community buildings by Chermayeff and DeMars, and apartments by Chermayeff. The single houses are small editions of the models shown in the rest of the exhibition.

Two new models will be added during the summer: a house by John Funk, on July 11, and one by Wurster and Bernardi in association with Ernest J. Kump, on August 15. The exhibition closes on September 3.

Build it with WHITE
WHITE CEMENT is unsurpassed for STUCCO

For Lasting Charm and Beauty

To obtain lasting charm, individuality and beauty in stucco, nothing surpasses the use of White Portland Cement. Only White Cement can give that clean-cut, distinctive white appearance that makes a stucco house stand out in any neighborhood. . . . Yes, and the use of White Cement is best when beautiful colored or tinted stucco is desired. The difference in cost between the use of white over regular gray cement for stucco is insignificant in relation to the total cost. To win your client's approval, specify stucco with White . . . and that means Medusa—the original White Portland Cement.

MEDUSA PORTLAND CEMENT COMPANY
1015 Midland Bldg. • Dept. B • Cleveland 15, Ohio

MEDUSA the ORIGINAL WHITE portland cement

BETTER HOUSING IN RURAL AREAS

The necessity for better housing in rural areas was brought to the front by Mrs. Samual I. Rosenman, chairman of the National Committee on Housing, in a talk given recently at a Working Conference on Farm Housing at Lexington, Kentucky.

Statistics show that the plight of the farm family is far worse than that of the city dweller, Mrs. Rosenman said. "In 1940 crowding was more general in rural than in urban homes. In the latter, 9 per cent of the homes exceeded the minimum measurement of overcrowding, while 16 per cent of the farm homes exceeded that figure."

Speaking on existing conditions, Mrs. Rosenman stated that in 1940 only 18 per cent of farm homes had running water in the house; only 11 per cent had a private bath or shower or flush toilet. Almost four-fifths of the families had outside toilets, and more than 9 per cent had no toilet of any kind.

WAR MEMORIALS

Wholehearted endorsement of "living" memorials for the service men and women of World War II has been received from every state in the country according to George M. Trautman, chairman of the American Commission for Living War Memorials.

"Over 1500 communities have signified their intention of building memorials that will increase the physical fitness of America," Mr. Trautman reports. For example, Bartlett, Texas, is planning a gymnasium-community center as a war memorial. Oakland, Calif., has passed a $600,000 bond issue to cover the construction of five enclosed swimming pools to be dedicated as war memorials. And Sharpsburg, Pa., will have either a memorial athletic field or a recreation building.

PRODUCERS' COUNCIL

Federal Loans

Municipal and state governments participating in the $17,500,000 federal fund for aiding advance planning of public works have been urged by L. C. Hart, president of the Producers' Council, to utilize the loans strictly for urgently needed projects.

"Since there is a large backlog of important local improvements," Mr. Hart said, "and since there almost certainly will be an immediate demand for enough private construction to utilize all available building products as soon as wartime restrictions are removed, there is no justification for using the federal loans to finance the detailed planning of deferrable projects which need not and should not be

(Continued on page 124)

USE TITANIUM FOR

Stabilizing

STAINLESS STEEL

AUSTENITIC stainless steel exposed in fabrication or service to temperatures between 900° and 1500° F. must be stabilized to prevent intergranular corrosion embrittlement.

Titanium is the most economical of the several present methods of stabilizing stainless steel and the supply of titanium is unlimited.

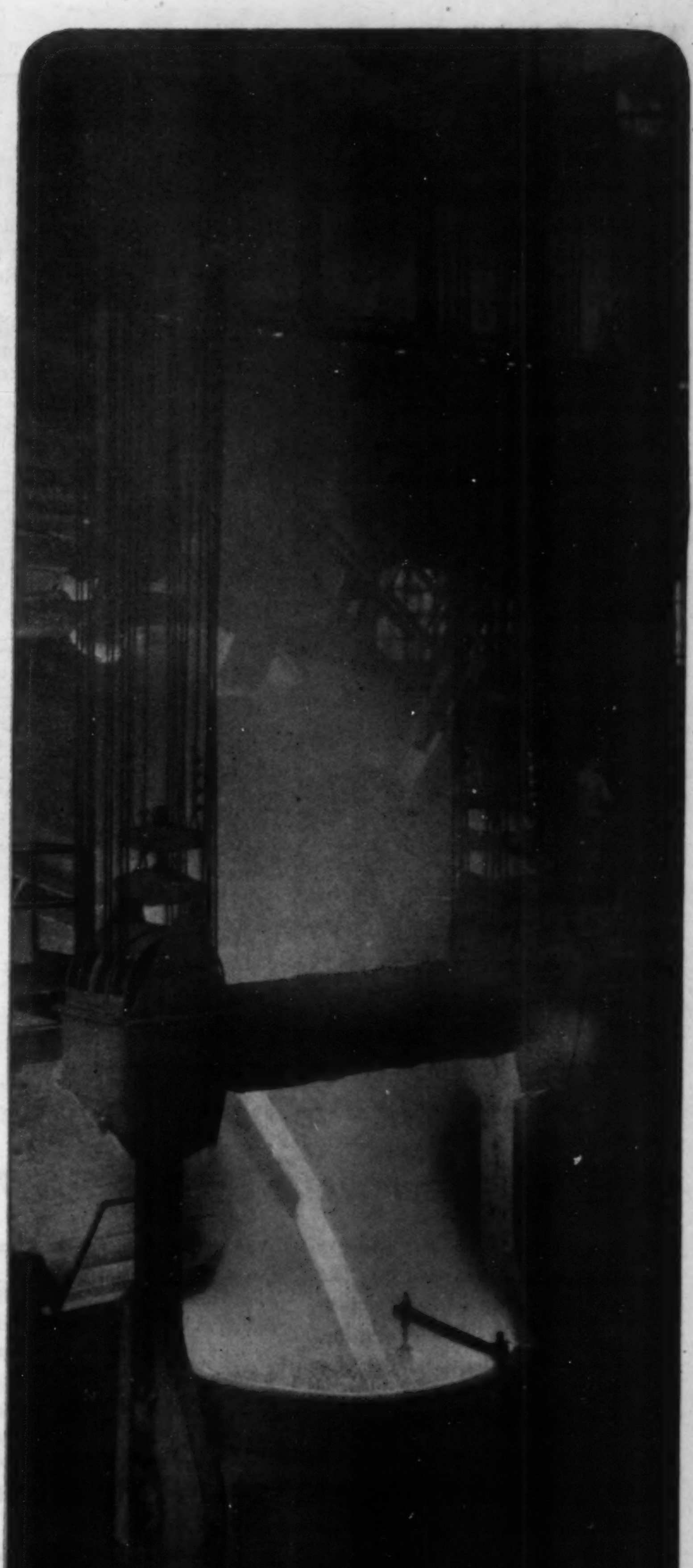
For heat resistance, for tube piercing and for formability titanium stainless steel is the choice of experience.

If you are using stainless steel at high temperatures one of our technical staff will be glad to explain the advantages of titanium to you.

TITANIUM ALLOY MANUFACTURING CO.

Executive Offices: 111 BROADWAY, NEW YORK, N. Y.
General Offices and Works: NIAGARA FALLS, N. Y.

TAM
ZIRCONIUM TITANIUM PRODUCTS
Registered U. S. Pat. Off.



THE RECORD REPORTS *(Continued from page 122)*

started until the volume of private building begins to slacken. . . .

"There now is general agreement both in government and in the construction industry that the building of deferrable public works should be scheduled in such a way as to balance total construction and stabilize employment in the building industry. Failure to follow this policy in the past has accentuated the ups-and-downs in construction volume."

Zoning Regulations

The expanded federal-aid highway program, scheduled to start promptly after the war, may require extensive changes in the zoning regulations of metropolitan areas, according to Irving W. Clark, chairman of the Residential Committee of the Producers' Council.

"Inasmuch as $125,000,000 annually, or one quarter of the total appropriation has been earmarked for construction of express highways into and through urban areas of cities having a population of 5,000 and over," Mr. Clark said, "many sparsely settled outlying areas will obtain modern transportation facilities for the first time, and other districts within the present corporate limits will acquire a new value for residential or other uses.

"If non-zoned areas bordering the new highways are not brought under sound zoning control before the highways are constructed, it is all too likely that undesirable residential, commercial or industrial developments may spring up quickly and impair the usefulness of large adjoining regions before proper safeguards can be set up."

Farm Building

The nation's farmers are planning to spend $3,200,000,000 for the construction, repair and improvement of farm homes and service buildings, according to an interpretation prepared by the Producers' Council of a recent survey of farmers' building intentions.

Interesting survey indications include: (1) the construction of 662,000 new farm dwellings during the first five years after the war; (2) 80 per cent of the expenditures for new farm dwellings for homes costing $2,000 or more, and 60 per cent in houses costing less than $4,000.

BUILDING CONSTRUCTION CURRICULUM PLANNED

The School of Architecture and the Arts, Alabama Polytechnic Institute, has adopted a four-year curriculum leading to the degree of Bachelor of Building Construction This course aims to give sound collegiate training to those who intend to become building contractors, material manufacturers, dealers, or service representatives, and building inspectors for municipalities or insurance companies. It includes a strong sequence of courses in mathematics, physics, structural theory, building construction and applied economics, and provides for several technical electives which permit the student to take advanced work according to his special interests. For further information address Turpin C. Bannister, Dean, School of Architecture and the Arts, Alabama Polytechnic Institute, Auburn, Alabama.

ELECTIONS AND APPOINTMENTS

Neil O. Broderson, president, Rochester Button Co., Rochester, N. Y., has been elected president of the Society of the Plastics Industry, Inc.

J. Andre Fouilhoux, of the architectural firm of Harrison, Fouilhoux and

(Continued on page 126)

WEATHER REPORT
CLOUDY WITH SHOWERS
RAIN—MORE RAIN

"There's going to be a lot of rain, Noah—better use **SISALKRAFT**"

Too bad, Noah, you didn't have an "Arkitect". Then you'd have had Sisalkraft in the Master Specifications. You ran into a lot of dampness, to say the least, and from what we've heard, a lot of stormy weather. Sisalkraft has a reputation for shutting out both — plus dirt and dust, although you probably weren't bothered with the latter.

And, Noah . . if you'd had manpower troubles, the fast, easy application of Sisalkraft — the elimination of batten strips — the little or no waste in handling — would have saved many ark hours.

We'll grant you didn't have to consider cost. But, if you were building an ark today, or a good house, Sisalkraft's *low cost* would carry a lot of weight.

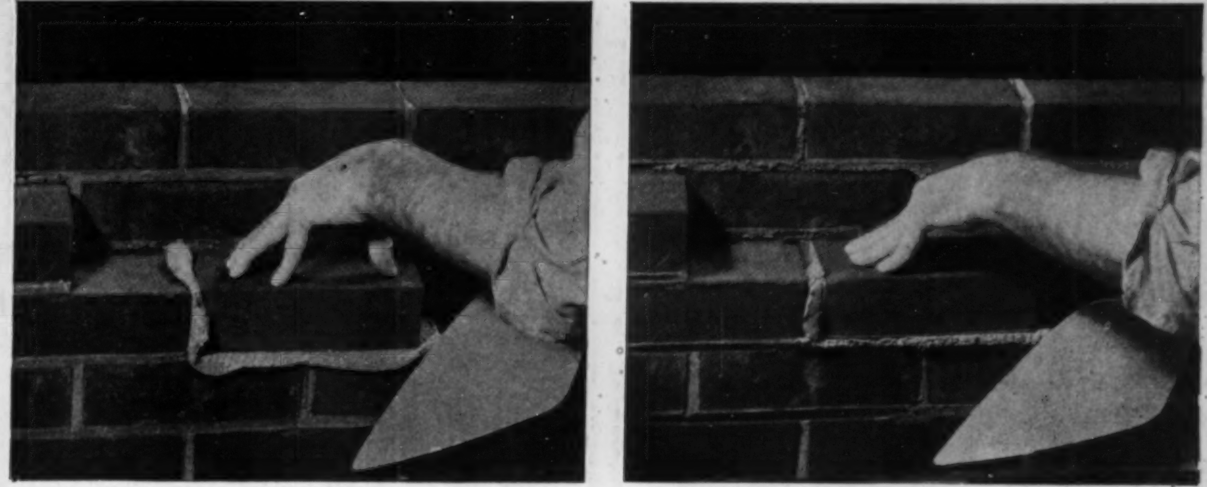
War production has restricted immediate availability — but after the war, as before, the Sisalkraft dealer organization will be ready to serve you in 48 states.

THE SISALKRAFT CO.
205 W. WACKER DRIVE · CHICAGO 6, ILL.
NEW YORK · SAN FRANCISCO · LONDON · SYDNEY
In Canada write to Alexander Murray & Co., Limited, at Montreal · Toronto · Halifax · Saint John · Winnipeg · Vancouver

Manufacturers of SISALKRAFT, FIBREEN, SISAL-X, SISALTAPE AND COPPER-ARMORED SISALKRAFT

BRIXMENT MORTAR

Is More Plastic



To compare the plasticity of any two mortars, try shoving a brick into place, with a full head joint. The more plastic the mortar, the easier the work. Try this with Brixment mortar!

AND GOOD PLASTICITY IS THE FIRST REQUIREMENT OF GOOD MORTAR

One of the most important characteristics any mortar can possess is *plasticity.* Within certain limits, plasticity is the greatest single factor not only in the *economy* of the brickwork, but also in its strength, its neatness, and its resistance to the passage of water.

One of the outstanding characteristics of Brixment mortar is its unusual plasticity. For twenty-five years, bricklayers all over the United States have agreed that the workability of Brixment is comparable to that of straight lime putty. This exceptional plasticity makes it easy for the bricklayer to secure neat, economical brickwork, with the brick properly bedded, and the joints well filled. And because of this unusual plasticity, a bag of Brixment will carry three full cubic feet of sand and still make an ideally workable mortar.

LOUISVILLE CEMENT CO., Incorporated, LOUISVILLE 2, KENTUCKY

CEMENT MANUFACTURERS SINCE 1830

LOWER COSTS FOR HIGH BUILDINGS
Montgomery Elevators

LARGE ITEM in the operating costs of high buildings . . . or any buildings of more than one story . . . is the vertical transportation of passengers and freight. Peak efficiency can be obtained at lower costs with Montgomery Elevators. Not only is their original cost generally lower than other comparable makes, but for years Montgomery Elevators have been giving such dependable service in thousands of buildings that *practically no major repairs have ever been required.* For post-war construction or modernization, whether the building plans call for two stories or 42, you can depend on Montgomery for assistance in designing and engineering an efficient vertical transportation system.

MONTGOMERY MANUFACTURES a complete line of passenger and freight elevators, electric dumbwaiters and special equipment for vertical transportation. If you are planning a specific project, Montgomery Elevator Company invites your elevator problems.

MONTGOMERY
Elevator COMPANY

HOME OFFICE • Moline, Illinois
Branch Offices and Agents in Principal Cities

THE RECORD REPORTS

(Continued from page 124)

Abramovitz, has been re-elected president of the New York Building Congress, Inc.

Francis Keally, A.I.A., has been appointed the architectural member of the Library Buildings Committee of the American Library Association.

Stephen F. Voorhees and Alfred Rheinstein have been elected to membership on the board of directors of the Regional Plan Association.

OFFICE NOTES

New Offices

The following architects have announced the opening of new offices:

Thomas Greer Coles, A.I.A., at 101 Park Ave., New York 17, N. Y.

Malcolm Graeme Duncan, at 101 Park Ave., New York 17, N. Y.

Jedd Stow Reisner, at 26 E. 55th St., New York 22, N. Y.

New Addresses

Robert Heller, industrial and store designer, has re-established his office and designing studio temporarily at 308 E. 51st St., New York City. He was recently released from active duty as Major in the Army Air Corps.

Josephine Von Miklos, industrial designer, has moved her studio and workshop from New York City to New Canaan, Conn.

Joins Firm

Floyd A. Blashfield, technical engineer, has joined the staff of Hospital Consultants, 612 N. Michigan Ave., Chicago 11, Ill. Mr. Blashfield was for many years associated with Scanlon-Morris Co., Madison, Wis.

Resigns Post

Ira S. Robbins has announced his resignation, effective June 30, as Deputy State Commissioner of Housing, New York, to devote himself to consulting service in housing and urban redevelopment problems and to the practice of law as a member of the firm of Hendricks, Robbins & Buttenwieser.

BACK ISSUES NEEDED

Foreign societies and journals have asked us for complete sets of back issues of ARCHITECTURAL RECORD from, and including, 1940. We would like to hear from anyone who may have such a set which he would like to donate to the good cause, as they will prove very useful to the architects of our allied countries in their tremendous reconstruction task.

There is NO SUBSTITUTE *for* EXPERIENCE

METAL CM CRAFTS

100 years of know how in the fabrication of ornamental metals, with examples of our fine craftsmanship adorning thousands of the finest buildings in America. You can entrust your blueprints to us with perfect assurance of accurate estimating, conscientious production, careful attention to every detail. We invite your correspondence on work covered by proper priorities, as well as projects which may be in the plan stage for post war.

DESIGN
AND FABRICATION

Calendar Cases
Card Frames
Check Desks
Collapsible Gates
Counter Railings
Doors
Elevator Cabs
Entrances
Gates Grilles
Letters and Numerals
Lighting Stands
Marquise
Name Plates
Railings
Safe Deposit Enclosures
Signs Tablets Wickets

IN ALL METALS

For details of Metalcraft Service, we refer you to Sweets 1945 Architectural File.

Remember THIS NAME *for* QUALITY WORKMANSHIP DEPENDABILITY

METAL CM CRAFTS

CINCINNATI
METALCRAFTS
Inc.
DEPT. AF-545, 34TH AND ROBERTSON
CINCINNATI 9, OHIO

RAINCOAT YOUR BUILDINGS
Against weather bombing

Restore and protect your property now

Waterfoil is made of irreversible inorganic gels. These gels bond both chemically and mechanically to masonry surfaces to form a dense hard coating. Because of its microscopic porosity this "raincoat" lets the masonry breathe and helps impede water penetration which causes reinforcing bar rust, spalling and disintegration.

The Horn Research Laboratories took ten years to develop and test Waterfoil. It has a true scientific basis for its formulation and contains no oil, cement, lime, casein or glue. Waterfoil is unlike any other masonry protective coating. Send today for the Waterfoil literature. Restore your property against weather bombing.

Horn Products and Methods Protect Millions of Square Feet of Surface Throughout the Nation

A HORN PRODUCT

WATERFOIL

THE UNIQUE TREATMENT FOR EXTERIOR MASONRY SURFACES

A. C. HORN COMPANY

Established 1897

Manufacturers of Materials for Building Maintenance
and Construction • Long Island City 1, N. Y.
Houston, Texas • San Francisco, Calif.

Venus Drawing Pencils are engineered to give you drafting perfection without failure: accurately *graded* to assure uniformity in all 17 degrees . . . *strong* in performance . . . *smooth* and *clean* in action.

AMERICAN PENCIL CO. NEW YORK - VENUS - DRAWING - 2H

Put VENUS to the test on *your* drawing board. Send us a postcard or a note for two free samples. *Specify* degrees wanted.

VENUS
DRAWING PENCILS

American Lead Pencil Company, Hoboken, New Jersey

(Continued from page 114)

and once again every conceivable phase of the subject is covered. A following chapter on plan analysis offers room diagrams and floor plans to point up the more general discussion. And finally there is a check list against which to measure house plans. The list even gives the average measurements of the most common pieces of furniture—a time saver if ever there was one!

To sum up, Prof. Johnstone's book is exactly the sort of thing that the family on the verge of either buying or building its own home will need.

HOME OWNERSHIP: IS IT SOUND?

By John P. Dean. New York (49 E. 33rd St.), Harper & Bros., 1945. 5 by 8 in. xiv + 215 pp. $2.50.

Dr. Dean has indubitably exposed himself to sharp criticism with the writing of this book. There is too much to be said on the other side of the fence. For what Dr. Dean has done is to emphasize all the dangers of home ownership and the shrewd salesmanship which is used sometimes to entice the public into buying.

Certainly there has been for some time a strong campaign on the part of real estate men, building materials and equipment manufacturers, the government, banks, etc., to create interest in home ownership.

As Dr. Dean points out, the own-your-own-home campaign is not likely of itself to rid the country of slums. And it *is* likely to lead to a series of unfortunate foreclosures. But the foreclosures will not always be caused by unwise home-buying; the new car, the fur coat and the hundred and one other items bought on the installment plan all too often encroach disastrously on the mortgage-payment budget.

One of the best chapters in the book is the last, in which is given a long list of questions which each family should ask itself before it buys. Such questions as: "Will we be contented to remain in this one spot for many years to come?" "Is our income future sufficiently defined to eliminate fluctuations which might make the obligations undertaken unwise?" "Are the trends in prices and rents such as to indicate that this is a wise time to buy?" "Is this particular house financially a wise buy—one which will not rapidly depreciate in value?"

Dr. Dean has put a tremendous amount of research and careful thought into this book. He has abundant facts and figures to prove what he says. But the emphasis is all on the negative side.

(Continued on page 130)

STEEL JOISTS
FOR CURRENT CONSTRUCTION
and
POST-WAR PROJECTS

AVAILABLE NOW
for Use in Floors, Roofs, and as Roof Purlins, Steel Joint Construction is

- ECONOMICAL
- LIGHT WEIGHT
- VERSATILE
- EFFICIENT
- PERMANENT
- FIRE RESISTANT

Laclede Steel Joists and Laclede Nailer Joists for Superior Construction and Design of

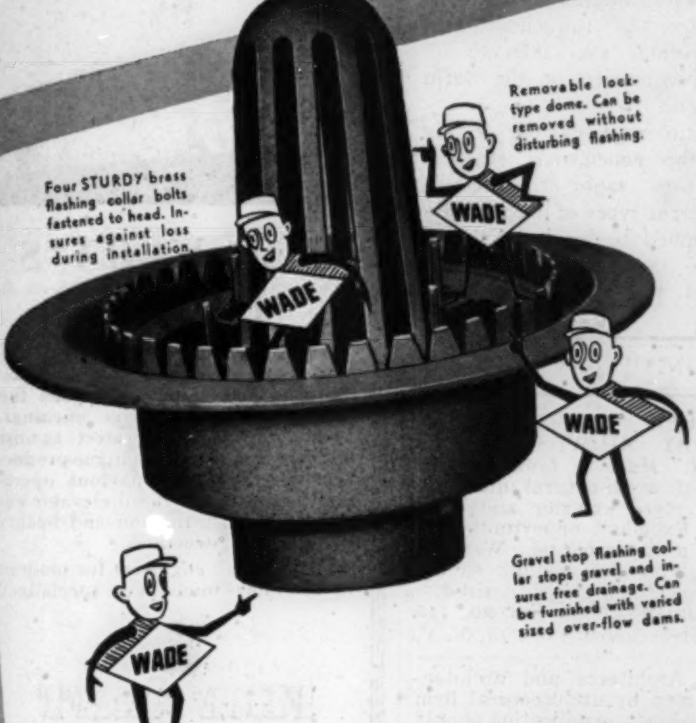
- FACTORIES
- HANGARS
- STORES
- APARTMENTS
- MILL BUILDINGS
- THEATRES
- CHURCHES
- RESIDENCES

LACLEDE

Write for Catalog

LACLEDE STEEL COMPANY
GENERAL OFFICES
ARCADE BUILDING, ST. LOUIS, MISSOURI

When you want the best —call for WĀDRAINS



Removable lock-type dome. Can be removed without disturbing flashing.

Four STURDY brass flashing collar bolts fastened to head. Insures against loss during installation.

Gravel stop flashing collar stops gravel and insures free drainage. Can be furnished with varied sized over-flow dams.

Furnished with either threaded or heavy caulk outlet.

- The No. 3100 Roof Drain shown here is a good example of the extra quality and value you get when you specify WĀDRAINS. Note the many features that contribute to longer life—to easier installation — to dependable trouble-free service. Whatever your drain requirements you'll find an answer in the WĀDRAIN line. It's your simplest and safest way to be sure of complete satisfaction.

WADE
WATER HAMMER ARRESTER
WADE MANUFACTURING COMPANY
6

STOP WATER HAMMER

with the Wade Arrester

Ends annoyance and damage of water hammer completely, permanently. Easily installed; needs no maintenance or adjustment. Sizes for all needs, all types of buildings. No. 6 illustrated; serves the average home..$12.00

WADE MANUFACTURING CO.
77-79 N. STATE STREET, ELGIN, ILL.

On the West Coast:
WADE-PORTLAND IRON WORKS DRAINS
(FLEMING DRAINS)

QUALITY PRODUCTS SINCE 1865

Floor Drains • Roof Drains • Backwater Valves • Grease Interceptors • Traps and Cleanouts • Swimming Pool Drains and Equipment • Water Hammer Arresters.